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# The Effects of Simulations on Global Empathy

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## Abstract

The learning outcomes for college curricula typically emphasize the development of a greater understanding of and empathy for people who come from diverse cultural backgrounds. In this research project the Alexandrian Inventory, a pretest/posttest survey instrument, was administered to undergraduate students to examine which simulations used in two courses were associated with the greatest changes in students' global empathy. An analysis of the data did not reveal a clear, statistically significant association between the simulations and empathy indicators.

Keywords: simulation, Twine, Statecraft, empathy, global, Alexandrian Inventory

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## Introduction

Higher education institutions in the USA have identified understanding across cultures as an important student learning outcome (SLO). The American Council of Education (2011, 14) has stated that “it is the obligation of colleges and universities to prepare people . . . to operate effectively in other cultures and settings.” The SLOs of the *LEAP: Liberal Education as a Global Necessity* program of the American Association of Colleges and University (AAC&U), designed to foster student success in an “era of global interconnection and rapid societal and economic change,” include intercultural knowledge and competence (AAC&U n.d., 1-2). SLOs for the undergraduate core curriculum Salve Regina University, the institution at which I am employed, include knowledge of the diversity of the human experience, an understanding of justice, and compassion toward others. Other universities and programs within them make similar statements (Eddy et al. 2013; Sales et al. 2013; Sprinks 2013; Carter et al. 2010; Cruz and Patterson 2005; Heuberger 1999).

Empathy consists of the “intellectual/imaginative apprehension of another’s mental state” and the “emotional response to . . . emotional responses of others” (Lawrence et al. 2004, 911). Global empathy occurs when individual employ these attitudes “towards the rest of the world” (Zappile 2013, 3)—toward people whose ethno-cultural, economic, political, and/or geographic backgrounds are very different from their own. In this sense, global empathy is a critical aspect of the cross-cultural understanding that U.S. institutions of higher learning seek to promote among their students.

One would expect, given the prominence of global empathy in institutionally-articulated SLOs, that colleges and universities can easily demonstrate its development among their students. This is often not the case, for three reasons. First, the percentage of U.S. higher learning institutions requiring undergraduates to take courses that “primarily feature perspectives, issues, or events from countries or areas outside the United States,” or that have an undergraduate foreign language requirement for graduation, has declined steadily since 2001 (American Council of Education 2012,

12). Required coursework “is one of the primary vehicles, if not the primary vehicle, by which students can acquire the skills and knowledge” needed to achieve desired learning outcomes (Peterson and Helms 2013, 30-31), so although “it is the obligation of colleges and universities to prepare people . . . to operate effectively in other cultures and settings,” undergraduates in the USA typically acquire “only a passing knowledge of other cultures” (American Council of Education 2011, 14).

Second, even where curricula provide students with the requisite academic opportunities, students are rarely assessed in a methodologically sound manner on how well they are acquiring the knowledge, skills, and attitudes needed to function effectively in situations of cultural difference. Sound data on whether typical curricular initiatives—such as “global” course designations and campus lectures by invited speakers—convince students, “especially less aspirational and lower performing [ones], to become more cosmopolitan [and] to . . . embed intercultural empathy in their learning” (Haigh 2009, 282) are often not collected. For example, research of 17,000 subjects found that undergraduate study abroad was associated with international career experience in the decades after graduation, but changes in students’ career aspirations before and immediately after study abroad were not measured (Norris and Gillespie 2009, 394).

Third, the campuses of many colleges and universities in the USA are extremely homogenous. For example, at Salve Regina University, 93 percent of the students in the incoming class of 2018 class identified themselves as non-Hispanic Caucasian on the *Beginning College Survey of Student Engagement*, and only 2 percent identified themselves as an international or foreign national student. People generally empathize more readily toward those who are similar to themselves in terms of gender, race, ethnicity, or personal experience (Bachen et al. 2012, 438; Paiva et al. 2005, 244), but it has also been observed that mere exposure to diversity and interaction between different social groups will reduce feelings of prejudice (Wessel 2009, 7-8). On

a campus that lacks diversity, students have fewer opportunities to encounter individuals who are culturally different.

Classroom simulations might be a convenient and effective method of helping students develop global empathy in courses that already exist in a university's curriculum. Studies have found that simulations can increase students' self-reported appreciation for the challenges of non-English speakers, their desire to learn about the practices and beliefs of different ethno-cultural groups, and their sensitivity toward the effects of cultural difference (Junn et al. 1995; Sales et al. 2013; Cruz and Patterson 2005, respectively). However, an association between simulations and an increase in students' global empathy has been difficult to demonstrate, in part because of vaguely defined variables, an absence of control groups, and the difficulty of distinguishing the effects of simulations from those of other confounding factors (Raymond and Usherwood 2013; Fowler and Pusch 2010; Bredemeier and Greenblat 1981).

This study attempts to determine which simulations embedded within two Fall 2014 undergraduate courses are associated with the largest increases in students' global empathy. Previous research conducted by Beers (2013), Zappile (2013), and Beers, Raymond and Zappile (2014) inspired the project. Beers (2013) found that students who participated in a real-time classroom simulation on the response to the 2010 Haiti earthquake reported that the simulation was effective at prompting them to consider different perspectives and increased their interest in the subject. In contrast, students who participated in an online ICONS simulation did not exhibit statistically significant increases in indicators of global empathy or interest in learning about the world (Zappile 2013). A follow-up study (Beers, Raymond, and Zappile 2014) using a policymaking simulation on internally-displaced persons in Haiti found no discernable, statistically-significant relationship between students' participation in a simulation and indicators of global empathy.

For this project, I conducted a pretest/posttest survey using the Alexandrian Inventory (Appendix A), an abbreviated, modified form of the global empathy and civic engagement survey

instrument used by Zappile (2013) and Beers, Raymond, and Zappile (2014). I administered the Alexandrian Inventory in both classes during the first and last weeks of the semester. The analysis of the survey data was conducted by Stephanie Jacques and Alisia Medeiros, two undergraduate students majoring in mathematics.

### UNV 101 Disaster! Stories of Survival

The first course examined in this study was a new first-year seminar, UNV 101. UNV 101 is now a requirement for all entering undergraduates at the university. The content of each UNV 101 section varies by instructor, and I designed my section of twenty-two students to target two of the university's core curriculum SLOs:

- Demonstrate knowledge of the diversity of the human experience through an in depth study of a culture outside the United States.
- Demonstrate awareness of the economic, environmental, political, and other challenges facing society and of the need for merciful and just responses to them.

Course content explored ethically complex decision making in high-risk, worst-case environments. Students read three books, each an account of a culturally-different individual who survived a disastrous event:

- *An Ordinary Man* by Paul Rusesabagina with Tom Zoellner (New York: Viking, 2006); an autobiography of the man who saved the lives of over one thousand people during the Rwandan genocide while working as a hotel manager in the city of Kigali. His experiences were depicted in the film *Hotel Rwanda*.
- *Zeitoun* by Dave Eggers (New York: Vintage, 2010); the biography of a Muslim Syrian-American in New Orleans who survived Hurricane Katrina but who was imprisoned without charge, trial, or conviction by federal authorities after the storm.

- *Fort of Nine Towers: An Afghan Family Story* by Qais Akbar Omar (New York: Farrar, Straus and Giroux, 2013); an autobiography of the author's experiences during the Afghan civil war and the Taliban regime. The book concludes with the U.S. invasion of Afghanistan in 2001.

Students first encountered this content through what Ewell and Rodgers (2014, 208) refer to as “course preparation assignments”—regular low stakes writing assignments on the readings that were completed outside of class—followed by discussion in class. Occasionally I presented additional information on related topics but there were no formal lectures. For much of class, students worked in teams to create digital interactive texts on the protagonist of each book using Twine, an open-source software program. Twine projects resemble the Choose Your Own Adventure books that were popular among children in the 1980s. The reader make decisions about the story while reading it and the narrative evolves according to those decisions. Because the Twine projects reflected the events recounted in the assigned books, they can be considered a collaborative exercise in building text-based historical simulations using information about people and situations unfamiliar to the students.

At the midpoint of writing each Twine, students reflected on the quality of their own and their collaboration using a worksheet submitted online. This enabled me to identify whether particular students or teams needed coaching; however, none of the teams exhibited a significant degree of dysfunction. Upon finishing each book, teams evaluated each other's Twines using a rubric, with the score earned by a team counting toward its members' final grades. Upon moving on to the next book, students rotated into new teams to maximize the number of classmates they engaged with during the semester.

With an anonymous survey at the end of the semester, students were asked to identify their most favorite and least favorite of the assigned books. As shown in Table 1, half of the respondents rated *An Ordinary Man* most favorably while *Zeitoun* and *Fort of Nine Towers* tied for least favorite.

Table 1: Of the three books used in UNV 101 ... (%)		
	Most Favorite	Least Favorite
N	18	18
<i>An Ordinary Man</i>	50	22
<i>Zeitoun</i>	33	38
<i>Fort of Nine Towers</i>	16	38

Students' stated reasons for their preferences are listed below in Table 2.

Table 2: Student Preferences in UNV 101		
An Ordinary Man	Pro	Most interesting. Familiar with story because of film. Narrator sympathetic/enjoyable. Most suspenseful. Story the most tragic/powerful.
	Con	Boring/not engaging. Not enough information/dialogue about other people.
Zeitoun	Pro	Most interesting. A lot of action. Story relates to counterterrorism. Can remember Hurricane Katrina so familiar. Most relatable because of U.S. setting.
	Con	Repetitive/too long. Main character unsympathetic. Confusing. Negative depiction of police/army. Had already read book in high school.
Fort of Nine Towers	Pro	Most interesting/action-packed. Events most recent. Interested in culture/politics of Middle East ( <i>sic</i> )
	Con	Didn't like the topic/uninterested in Afghanistan. Confusing. Never became emotionally invested in story. Writing style.

### POL 120 Introduction to World Politics

The second course examined was POL 120 Introduction to World Politics, an introductory international relations course. My discipline-based learning objectives for POL 120 were, first, for students to understand different international relations theories; second, for them to be able to use



those theories to explain the behavior of international political actors; and third, for students to become familiar with the political environment in which decision-makers create and implement foreign policy. This content of this course reflected the same two core curriculum SLOs that I used for my section of UNV 101.

To provide students with the opportunity to achieve these objectives, I organized the course around two different types of simulations, *Statecraft* and a series of five crisis negotiation scenarios that I designed. Like the Twines in UNV 101, these simulations occupied much of students' class time. On days when no simulation was in progress, students completed preparation assignments and engaged in class discussion, as in UNV 101. Lectures were occasional, brief, and stressed basic aspects of realist, liberalist, and constructivist international relations theories, and their corresponding levels of analysis. Students were tested on these concepts with five online quizzes. Twenty students were enrolled in the course; thirteen first-year students, four sophomores, one junior, one senior, and one non-matriculant.

*Statecraft* is a commercially-available simulation of a fictional world. Participants earn points if their teams achieve particular goals, but competition for scarce resources, conflicting domestic and international interests, and the different personalities and values of individual participants make these goals difficult to achieve. Teams represent nation-states, and prior to the start of *Statecraft*, teams select a form of government and country attributes that affect their incentive structures.

*Statecraft* unfolds through a series of turns in which nation-states produce limited amounts of gold, food, steel, scientific knowledge, and oil. These resources can be used to build military capabilities or domestic structures, invested in research that speeds the acquisition of valuable technologies, or traded with other nation-states. *Statecraft* rates nation-states on domestic characteristics like health, environment, safety, education, and culture; these ratings can be improved with the purchase of hospitals, schools, prisons, and other facilities. Each team must also

try to manage the approval ratings of six domestic factions (capitalists, socialists, environmentalists, nationalists, civil libertarians, and intellectuals). If any faction's approval rating falls under thirty-five percent, it will engage in demonstrations, riots, and strikes that consume the nation-state's resources. As teams execute trades, purchase structures, launch military attacks, and ally with other teams, the *Statecraft* website tabulates resource levels, domestic approval ratings, and points earned for each team.

After the conclusion of *Statecraft* at the midpoint of the semester, student participated in five simulations on crisis negotiation. These simulations were based on events recounted in *Chasing Chaos: My Decade In and Out of Humanitarian Aid*, by Jessica Alexander (New York: Broadway Books, 2013), which I assigned as required reading for the course. The book details the author's experiences as a humanitarian aid worker in Rwanda, Sudan, Sri Lanka, Sierra Leone, and Haiti; these locations served as the settings for the different crises. For each simulation, students were assigned to five teams representing interest groups with goals to achieve during negotiations.

Students earned points toward their final grades as follows:

- 20 points if a student's team achieved its primary goal.
- 10 points for achieving the team's secondary goal.
- 0 points for achieving neither goal.
- 40 points for achieving either the primary or secondary goal as part of a unanimous agreement between all five interest groups involved in the crisis.

A crisis ended when at least three teams reached an agreement that satisfied either of the two goals for each team.

Preparation for each simulation consisted of reading the relevant chapters in *Chasing Chaos* and completing several writing assignments. At the beginning of class on the first day of each simulation, I gave students a brief written synopsis of a fictional crisis and privately informed each team of its objectives. Teams then negotiated with each other until they reached an agreement that

ended the simulation. I functioned as a facilitator and conducted a verbal debriefing at the close of each simulation.

For the first two crises—on Rwanda and Sudan—negotiations reflected the objectives assigned to each team. For the latter three crises, students revealed the objectives to the rest of the class in the hopes of achieving a unanimous agreement and earning the maximum possible amount of points. This occurred even in the final simulation—on Haiti—for which I had deliberately created team goals that sharply conflicted with each other. Students completed each of the five simulations in less than two full fifty minute class periods.

Students reacted positively to both *Statecraft* and the *Chasing Chaos* simulations, but in an end-of-semester survey, they indicated a preference for the *Chasing Chaos* simulations by a ratio of two to one. Survey responses are shown in Table 3.

Table 3: Student Preferences in POL 120		
Statecraft	Pro	Hands on decision making process. Saw how decisions affected citizens. More realistic. Fun.
	Con	Outcomes determined by countries' initial resource allocations. Too long in duration. Too much like a pointless game. Difficult to understand.
Chasing Chaos	Pro	More control over grade. Debate more interesting; more interaction with entire class. Learned/challenged more. Shorter duration. More realistic. Easier to understand.
	Con	Simulations unfair. Felt like homework.

## Comparison

The evaluative surveys given to students asked them to rate certain aspects of their experience in UNV 101 or POL 120, shown in Table 4. It appears that:

- More students in UNV 101 felt that it was easier than other courses they had taken during the semester than did students in POL 120.
- More students in POL 120 felt that they learned more from it than they had from their other courses than did students in UNV 101.
- Students in POL 120 thought to a greater extent that their decision making ability had improved because of the course than did students in UNV 101.
- Students in both UNV 101 and POL 120 believed that the courses had increased their understanding of the diversity of human experience, though responses from POL 120 students were a bit more favorable.

Table 4						
Compared to my other courses this semester, this course was (%)						
	N	Much Harder	Somewhat Harder	About The Same	Somewhat Easier	Much Easier
POL 120	18	0	27	55	16	0
UNV 101	17	6	12	12	41	18
I learned _____ in this course than in my other courses this semester. (%)						
	N	Much More	Somewhat More	Neither More Nor Less	Somewhat Less	Much Less
POL 120	18	22	44	27	5	0
UNV 101	18	5	11	44	27	11
I believe my decision making ability has _____ because of taking this course. (%)						
	N	Improved Greatly	Improved Somewhat	Stayed The Same	Worsened Somewhat	Worsened A Lot
POL 120	18	5	83	11	0	0
UNV 101	18	11	50	33	0	5
I believe that I have a _____ understanding of the diversity of human experience because of taking this course. (%)						
	N	Much Stronger	Somewhat Stronger	Neither Stronger Nor Weaker	Somewhat Weaker	Much Weaker
POL 120	18	50	50	0	0	0
UNV 101	18	22	61	11	0	5

Students' responses to questions on the Alexandrian Inventory did not show an improvement in global empathy from pretest to posttest. For UNV 101, pretest to posttest changes in responses to question 3 ("I am willing to spend \_\_\_\_\_ hours per month on a project run by the Multicultural Student Organization that has the goal of improving the economic, political, or social circumstances of people in another country") and 5 ("I am willing to spend \_\_\_\_\_ hours per month on a project sponsored by Students for Mercy to promote the rights of people in another country")

were statistically significant at  $p < .05$ , but the changes were in a negative direction. Changes in the average scores for all other survey questions were generally negative but none were statistically significant. Complete pretest and posttest results from the Alexandrian Inventory are located in Appendix B.

### By Way of Conclusion

Because no clear patterns emerged in students' responses to the Alexandrian Inventory, I was unable to test my hypothesis—there is no evidence that the simulations in UNV 101 or POL 120 are associated with improvements in students' global empathy. While the Alexandrian Inventory might have lacked validity for this type of research, it is similar to surveys used in other studies in which findings were statistically significant (Bachen et al. 2012; Wang et al. 2003). Other studies have shown that simulations are associated with statistically significant attitudinal changes in students (Mariani and Glenn 2014; Bachen et al. 2012). It is within reason to assume that other design flaws in this study account for the absence of evidence.

Sample sizes were extremely small—only nineteen students in UNV 101 and fourteen students in POL 120 completed both the pretest and the posttest. Small sample sizes are unlikely to reveal small effects. However, enrollment is capped at twenty-two students in UNV 101 and thirty-five students in POL 120, and I taught only one section of each course in the Fall 2014 semester. I teach these courses only once per year at most.

The research also lacked a control group. If the Alexandrian Inventory had been administered to a class that did not participate in any simulation and posttest scores had declined severely, this would be evidence in support of including a simulation, regardless of type, in one or both courses. However, for reasons mentioned above, no control group was possible.

Finally, this type of pretest/posttest design can't account for the other potential influences on students' attitudes during the semester—such as stress from off-campus employment, anxiety

about their academic performance in other courses, failed romantic relationships, or what students ate for breakfast on the day of the posttest. Any number of these factors could have affected students' responses to a survey administered in the last week of the semester.

The other surveys that were administered suggest, in a non-statistically significant fashion, that students in POL 120 felt that they were challenged more, learned more, and developed a stronger understanding of the diversity of human experience than did students in UNV 101. This implies that the *Statecraft* and *Chasing Chaos* simulations might be more pedagogically efficacious than the Twine projects. However, one's perceptions of an experience do not necessarily reflect the influence of that experience, and such perceptions are frequently affected by whether the experience confirms or disconfirms prior beliefs (Nestler and von Collani 2008, 482; Wilson and Nisbett 1978, 130; Maznick and Zimmerman 2009, 34). Students' liking an experience "may not necessarily mean they learned anything from it" (Brademeier and Greenblat (1981, 318). In sum, there is no reliable data in this study that demonstrates the pedagogical effectiveness of any of the simulations used in UNV 101 and POL 120.

Appendix A: Alexandrian Inventory

1. I am willing to spend \_\_\_\_\_ eating breakfast, lunch, or dinner with students from other countries whose perspectives and ideas are different from mine.

Hours per month  
0 1 2 3 4 5 6 7 8 9 10

2. My likelihood of voting in upcoming elections is \_\_\_\_\_.

Percent  
0 10 20 30 40 50 60 70 80 90 100

3. I am willing to spend \_\_\_\_\_ on a project run by the Multicultural Student Organization that has the goal of improving the economic, political, or social circumstances of people in another country.

Hours per month  
0 1 2 3 4 5 6 7 8 9 10

4. I prefer letting experts take responsibility for solving global or international problems.

Strongly Disagree 1 2 3 4 5 6 7 8 9 Strongly Agree

5. I am willing to spend \_\_\_\_\_ on a project sponsored by Students for Mercy to promote the rights of people in another country.

Hours per month  
0 1 2 3 4 5 6 7 8 9 10

6. I am willing to spend \_\_\_\_\_ attending campus events such as Pell Center lectures to learn about people in other countries whose political, economic, or social situations are quite different from my own.

Hours per month  
0 1 2 3 4 5 6 7 8 9 10

7. After graduation from college, I am \_\_\_\_\_ likely to take a job working in a country other than the USA where injustice, discrimination, or poverty is common.

Percent  
0 10 20 30 40 50 60 70 80 90 100

8. I am willing to spend \_\_\_\_\_ reading, watching, or listening to the BBC or Al Jazeera to provide brief international news summaries to Mosaic, the student newspaper, for students to read.

Hours per month  
0 1 2 3 4 5 6 7 8 9 10



Appendix B: Pretest/Posttest Survey Results

Survey Question	Course	N	Average Scores			SD	<i>p</i>
			Pretest	Posttest	Difference		
1	UNV 101	19	6.1053	4.6842	-1.4211	3.0059	0.0541
	POL 120	14	5.6429	5.3571	-0.2858	2.8401	0.7127
2	UNV 101	19	64.7368	66.3158	1.5789	36.8576	0.8540
	POL 120	14	76.4286	68.5714	-7.8572	17.1772	0.1107
3	UNV 101	19	4.9474	3.5263	-1.4211	2.6101	<b>0.0290</b>
	POL 120	14	4.7857	4.1429	-0.6428	3.3422	0.4845
4	UNV 101	19	5.1579	5.4211	0.2632	3.7689	0.7644
	POL 120	14	5.9286	6.2857	0.3571	1.1507	0.2664
5	UNV 101	19	5.2105	3.6316	-1.5789	2.6313	<b>0.0175</b>
	POL 120	14	5.2857	4.2143	-1.0714	2.0556	0.0730
6	UNV 101	19	4.4211	3.5263	-0.8947	2.8066	0.1816
	POL 120	14	4.8571	4.0000	-0.8571	2.3487	0.1953
7	UNV 101	19	28.9474	33.1579	4.2105	23.6445	0.4477
	POL 120	14	24.2857	25.7143	1.4286	18.7523	0.7801
8	UNV 101	19	3	2.4737	-0.5263	2.5026	0.3714
	POL 120	14	2.6429	2.8571	0.2142	2.6654	0.7683

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