
***Creating a Culture of Diversity, Equity & Inclusion
Through Active Learning Using Student-Created Infographics***

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Infographics have been a very effective teaching tool that has helped to reinforce discipline-specific concepts learned in the classroom (while also incorporating Diversity, Equity and Inclusion topics). This paper highlights the value of student-created infographics as a tool to further develop critical thinking skills while enriching the student learning experience in the classroom. The authors will share their experiences using student-created infographics, in addition to procedure for submissions, assignment instructions, and assignment rubrics.

Infographics as an Active Learning Strategy

As educators, we strive for additional ways to facilitate the students' process of learning, understanding and retaining material by actively engaging our students. Integrating infographics provides a visually compelling way to communicate various topics while actively engaging and developing students' critical thinking skills. *The purpose of this article is to demonstrate how an assignment using an active learning strategy can be utilized across disciplines while also integrating diversity, equity and inclusion in the curriculum, at the same time it promotes a creative and positive learning environment.*

Generation Z students have a "thoughtful worldview" and want to engage in service that has a tangible and lasting impact on systematic and structural problems (Miller & Grace).

According to Merriam-Webster, an infographic is "A chart, diagram, or illustration (as in a book or magazine, or on a website) that uses graphic elements to present information in a visually striking way," <https://www.merriam-webster.com/dictionary/infographic>. Infographics are part of technology integration, as it is a way to visually convey information, as they are engaging, creative and easily shareable—and

encourage students to synthesize and express the information they have learned (Gretter, <http://insideteaching.grad.msu.edu/using-infographics-for-teaching-and-learning/>).

This article discusses the effectiveness of using infographics in the classroom from our case study, implemented at a single university across two disciplines. Further, it explains the use of infographics in projects for undergraduate students and how faculty may incorporate this tool into classroom lessons as an active learning strategy. The authors also share their respective experiences utilizing this strategy to reinforce discipline-specific concepts learned in the classroom, and they share respective sample students' infographic submissions, assignment instructions and assignment rubrics. Moreover, the authors share how they have designed specific projects to incorporate diversity and inclusion in the curriculum, and specifically how the infographic assignment was the vehicle to facilitate integration and discussion. The authors discuss qualitative research of student comments on the projects. Overall results have been highly positive.

Background Material/Introduction/Literature Review

Educators have long recognized the need to move beyond traditional lectures and incorporate emerging technologies to engage students in the classroom. "Despite all the existing research on new technology use in the higher education classroom, the literature on using infographics in teaching remains highly limited, at best." (Matrix 18). The use of infographics, however, can serve as a method for teaching students to synthesize important information and processes for a given topic of study, and "visual digital literacy competencies are essential for 21st Century learners across the disciplines. Certainly, there are field-specific visual communication styles, expectations and norms, and the experience of designing an infographic can serve to enrich students' understanding of their own disciplinary specific requirements." (*Id* at 18). The student's efforts to understand vital subject matter and to distill that information into a compact format helps the student master subject matter and distill the information into a compact visual format. This allows the infographic to serve as a substitute assignment for the traditional term paper, for example. "Digital tools have been shown to increase individual learning outcomes and foster communication and collaboration among students" (Buckner & Kim 2013).

While traditional methods have advantages such as improving written communication skills, for modern students who are savvy users of technology, “Active learning allows students to make their own sense of ideas they are encountering and to integrate ideas with what they already know.” As the Sheridan Center at Brown notes, “but as with any teaching strategy, quality of implementation is more important than quantity. Because any new teaching approach takes some adjustment, it works well to start small, trying one or two active learning strategies per class, before engaging in more intensive active learning.” This approach has been to use the infographic as a learning strategy to engage students in an active learn approach that leverages the modern student’s comfort with technology and visual presentation methods. “The vital educational advantage of the infographic is the fact that in its own structure, an infographic contains all the information, including the methodical conception of the problem” (Pulak 344).

The authors chose to use the infographic to introduce issues of equity, diversity, and inclusion. “Culturally relevant lessons incorporate students’ experiences and connect them to the learning material” (Goethe, 190), and because there is an interest in showing the positive results of the intersection between diversity and technology in the classroom, the use of infographics on this project provides an excellent means to achieve this.

Methodology and Assessment

As a fundamental part of the assignment, participants worked individually and were given a task of making a simple infographic for submission that was viewed by all classroom participants via a virtual gallery. The authors facilitated this process by working with each respective student. The authors facilitated a reflection survey for participants to evaluate their experience and provide suggestions/comments about the use of infographics as a tool for active learning and student engagement in the classroom.

Even though the project is done in two different courses, the procedure is similar. For the case of Business Law students, they work for a few weeks on the subject of employments laws designed to protect employees from discrimination in the workplace, (*Title VII of the Civil Rights Act of 1964*, as amended, *American with Disabilities Act (ADA)* and *Age Discrimination in Employment Act (ADEA)*). During class meetings, the professor discusses the general basis of the law, while having an in-class

discussion with the students. Prior to the introduction of this project, students generally reviewed various case students to supplement lecture materials. However, with the infographic project, the students select a case from the database, from which they will create, develop, and explain the infographic. This is done with a collaborative presentation, where both professors talk about the project, from understanding how an infographics work, to what are good and or bad examples of these, in order for students to have guidelines on how the poster should be developed, while being mindful of avoiding disruptions on the creative process. At the same time, during this class period, the professor shares the specific details for assessment of the project, by providing a specific rubric that students should follow for a successful project, based on critical thinking and self-reflection about diversity and inclusion, and honoring the references and sources used and quoted for the infographics.

The final project then is delivered on a virtual board, in this case *Padlet*, where students are vetted by the professor before posting to assure that the students comply with the requirements of the project. This also provides for a safe way that avoids plagiarism or copycat of other student's ideas. Once again, during an in-class meeting students briefly discuss their infographics with the class, followed by a discussion with clarification of any doubts or missing components to verify for student's knowledge and application. This then is a safe space for difficult conversations where most students come to a higher understanding and appreciation of the value of Diversity and Inclusion in class, at workplaces and in everyday life. The cycle of the project ends with post-class self-reflection, comparison and analysis commentary from the students submitted in a private journal via the learning management system, as it was noted in the rubric provided earlier.

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IndigoGraphics Rubric

Grading System for Indigo: Please read the Rubric to understand how the project will be graded. Your project will receive points within each Category on the left side rubric, based on the "Excellent," "Satisfactory," "Needs Improvement," and "No Submission" columns. The sum of all these will provide a total that will be your final grade.

Category	Excellent (80% - 100%)	Satisfactory (60% - 79%)	Needs Improvement (1 % - 59%)	No Submission (0)	Subtotal
Required Elements on IndigoGraphic: (Case Name, Applicable Federal Law, Brief Case Summary & Resolution and True-who-company should/shouldn't be responsible)	All required elements are found correct	Most of the required elements are correct missing	Four required elements are correct need improvement	No submission	
Pictures/Graphics (Minimum 3 points)	Pictures and graphics are clear and relevant. The project has an excellent design and layout. It is easy to understand the content.	Most pictures and graphics are clear and relevant. The project has a good design and layout. It is easy to understand the content.	Four of the pictures and graphics are relevant. The project needs improvement in design layout and/or content.	No submission	
Grammar/Writing Mechanics (3 points)	No grammatical or content errors are clear. Spelling and punctuation are included.	1-2 spelling, grammar or punctuation errors. Answers read clearly.	3-4 spelling, grammar or punctuation errors. Answers need improvement.	4+ spelling, grammar or punctuation errors, or no submission.	
Critical Thinking Case Analysis Questions Responses - See below (21 points total)					TOTAL

Critical Thinking Case Analysis Questions (21 points total as noted above)

After reviewing your IndigoGraphic, on a separate MS Word Document submit answers to the following questions:

- Case Name:
- Court/Forum Used:
- Applicable Federal Law Cited (e.g., Title VII, ADA, ADEA, etc.)
- Define the Federal Law Cited:
- Provide a Detailed Case Summary:
- Provide the Current Resolution:
- Provide whether you agree or disagree with the Court's findings and why:
- IndigoCase Source:
- Additional Questions (5 points of this section of the rubric above):
- 1. Why did your choice of this particular EEOC case?
- 2. How did your choice of the particular pictures and graphics that you used, and why do think they best convey your message?

On the Private Journal, after seeing the other students' IndigoGraphics in the gallery, please post your response as 1) either three your own, which IndigoGraphic(s) did you like best and why, and 2) what you would change about your IndigoGraphic for improvement and why? Provide a detail of response (5 points of this section per the rubric above)

Spanish-speaking countries and/or groups. At this point, students are able to make sentences with a more complex phrasal structure for the subjunctive that talks about emotions: “Me molesta que” (It upsets me that); “Es importante que” (It is important that); “Es urgente que” (It is urgent that) to mention a few. Through these expressions, students are able to employ their language skills to express discontent, urgency and/or attention to situations that range into abuse or lack of human rights. As part of the class preparation, students watch a video in Spanish with captions in English, where it explains the origin of human rights. From there, they read one or two simple current news articles that reflect the urgency on calling out people and government on lack of diversity and inclusion because of the abuse of their human rights. As groups of 3 students, they select 3 areas of discrimination that are of interest to them, based on another infographic (and a way to present this pedagogical tool) that represents these, and from there they go on to create a poem based on “Derechos Humanos, Diversidad e Inclusión”. Each section of the poem will have 2-3 sentences that use the subjunctive, and where they will express their emotions and feelings about the issues, thus creating a poem that will be developed into a poster, that in this case refers to the infographic.

The assessment part in this case, covers other areas that include grammar use, pronunciation and speaking, and classmate’s comprehension of the message being presented.

	Poor: D 12 pts Major issues with language comprehension and development; pointing to talking the class. Needs to work ASAP with Professor and Tutor to have a passing grade.	Fair: C 14 pts Average work, needs more help to overcome essential mistakes. Needs to work regularly with Professor and/or Tutor.	Good: B 17 pts Good work, shows growth. On the path to better language proficiency but still needs to improve minor details.	Excellent: A 20 pts Keep up the good work!
Vocabulary usage 20 pts	Poor: D Used little to no variety in their self descriptions.	Fair: C Demonstrated vocabulary used in Spanish 1 and created minimal descriptions.	Good: B Demonstrated some use of vocabulary present in all three previous levels.	Excellent: A Demonstrated a wide variety of vocabulary present from all three previous levels.
Grammar Accuracy 20 pts	Poor: D Does not attempt to use correct grammatical concepts	Fair: C 6 or more mistakes. Does not place words in correct order (e) - adjectives after nouns).	Good: B 3-4 mistakes. Responses mostly appropriate and adequately developed, emotional tone is there but not consistent.	Excellent: A Excellent control of basic linguistic patterns, speaks with emotion appropriate to topic.
Fluency/Comfort Speaking 20 pts	Poor: D Does not attempt beyond saying basic level one words and/or repeats phrases and words.	Fair: C Gives only one word responses. Pauses frequently to "remember" sentences rather than speak naturally.	Good: B Can speak in complete basic sentences of 3 or more words. Needs to pause for organization and organization, but just needs time to answer.	Excellent: A Good command of vocabulary. Can speak within basic dialogue structure regarding self for the required time. Can be understood by any listener.
Pronunciation Level 20 pts	Poor: D Does not attempt to use any correct pronunciation, repeats the same phrases	Fair: C 5+ oral mistakes. Hears but does not self-correct, seldomly repeats phrases	Good: B 3-4 oral mistakes. Responses mostly comprehensible. Pronunciation does not hinder communication. Hears and self-corrects incorrect pronunciation, repeats a phrase 1-2 times.	Excellent: A 0 - 2 mistakes, but is readily understood by any listener. Hears and self-corrects any incorrect pronunciation, 0-1 repeated phrases
Overall Effort 20 pts	Poor: D Assignment is incomplete.	Fair: C Fulfills 1 of the requirements of the assignment.	Good: B Fulfills MOST (3-2) of the requirements of the assignment.	Excellent: A Fulfills the ALL 4 requirements of the assignment and has put care and effort into the process.
TOTAL 1 pts	Poor: D	Fair: C	Good: B	Excellent: A

Students receive an individual and group grade combined. Because of the nature of the group project, students have a low-stakes classmate participation evaluation that contributes to their grade as a group, while most of the grade goes to the poster delivery and class-presentation. In this case, originality and creativity have a higher impact on the grade, as they are developing a creative work. Once finalized, the posters are added to the Padlet virtual gallery where they are approved and added, followed by class presentation and discussion. The critical thinking discussion on a second language (L2) provides for a more meaningful and impactful connection with the language, making it a moment where students are mindfully speaking in a different language in order to convey a message that results in the promotion of diversity and inclusion in various languages. This concludes with a quick comment note where they can express in English what they learned and how they felt during the process of the project in L2.

Pedagogical Dissemination

This project has been completed in courses more than 6-8 times combined for both courses, on face-to-face, hybrid, and fully online learning experiences. The quotes below are samples of student's comments and reflection after completing the infographics project and presentation.

Business Law Course

"Educating all employees at a company can help reduce discrimination against employees. I chose this case because I thought the outcome was interesting. I felt that it was necessary for a company who violates something like the ADA to train all employees in different aspects of the law. As a manager, I must know specific laws and regulations about discrimination at my job. Choosing a case like this is beneficial for me because I have to deal with employees myself and knowing how to handle certain situations is important."

"Sexual Harassment at the workplace is all too common and it strikes a nerve with me. I have heard stories from my wife on the way some men talk to women at work and whether intentional or not, the culture needs to shift and action needs taken against this type of hostility."

"I chose this case because I thought the fact that Chuck E Cheese's was involved was interesting. I also have spent a large part of my life working with special needs kids and the fact that people are still discriminating like this really ticks me off. I hope that resolutions like these will decrease the chances of this happening in the future."

"I chose this case because it stuck out to me as cruel, I may not usually personally experience these things but you still feel terrible reading these. Being harassed and belittled by those in charge is not a fair environment."

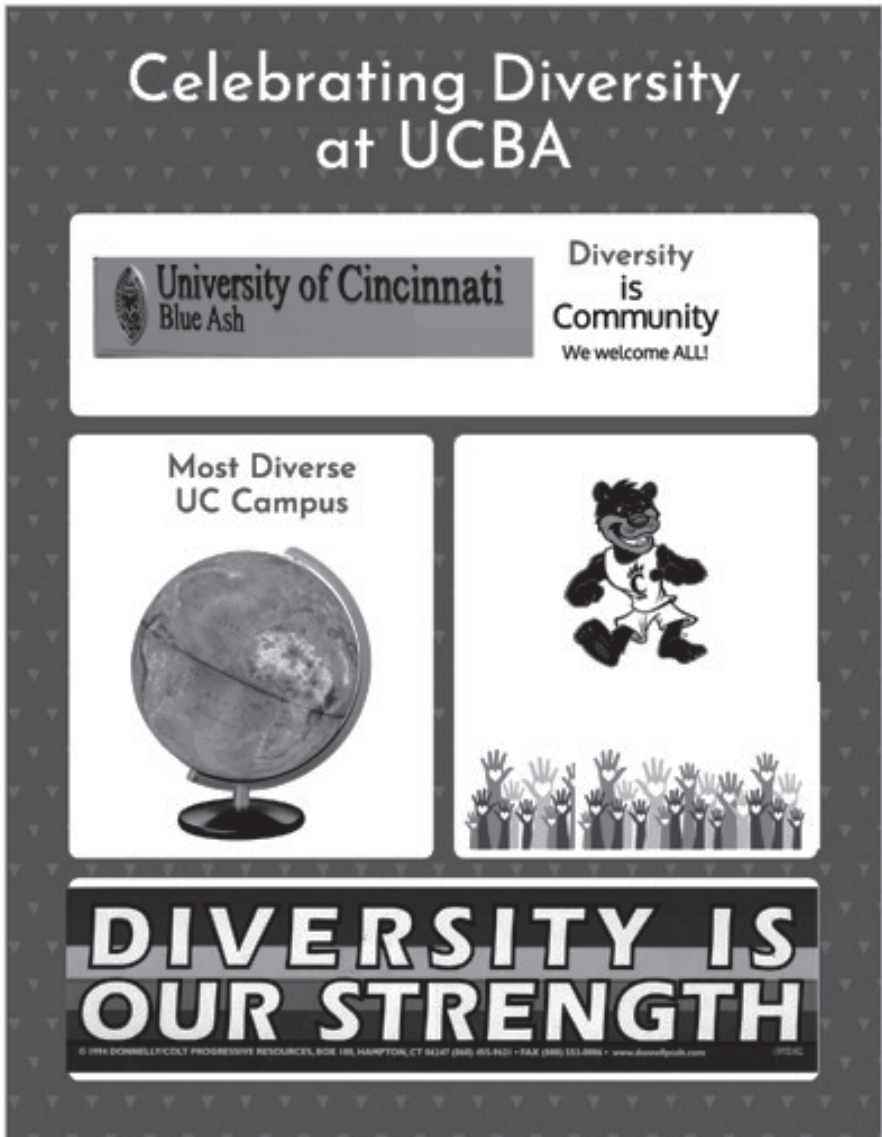
"I chose this case because I myself am a part of the LGBTQ community. This case is giving me much more insight on how the law perceives us as people and I am learning how to combat the discrimination I may face later on."

"I chose this case because I have a high interest in immigration rights and law. I feel that most of the discrimination that occurs results from ignorance towards another's culture or lifestyle. I also believe it stems from the lack of understanding what it means to be immigrant and why people need or want to live and work in another country versus remaining in their birth country."

Spanish 4 Language Course

"This project and the importance of human rights moved me to become involved in my community and help the immigrant families with my Spanish language skills."

This project success rate continues to be high and a favorite among students. As a result, and following other colleagues' interest, this in-class project has been turned into a pedagogical workshop experiences for educators that has been delivered for international audiences at the 11th Annual International Conference of Education, Research and Innovation (ICERI) conference in Seville, Spain, on campus for the Teaching and Learning Center, and for the University's Faculty Enrichment Center. At the same time, this project was at the center of the first on campus Inclusion Institute – promoted by the Accessibility Office. This innovative experience was in collaboration with faculty and staff, where student's projects on diversity and inclusion were highlighted as champions of promoting a more inclusive campus community.



Free Infographic Maker  VENNGAGE

Future Outcomes

As educators, we plan to continue on executing this project with modifications as needed, as we are aware of the changing needs of students. Our commitment to deliver a student-centered experience that focuses on innovative, effective, meaningful and creative learning

experiences. This paper describes a case study, implemented at a single university across two disciplines. A more rigorous assessment would expand outcomes across other institutions and disciplines. In the future, a more systematic assessment would assess the use of infographics in improving student outcomes, particularly in the context of equity, diversity, and inclusion.

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