Developing racial equity and social justice GIS learning content with inclusive and culturally sensitive considerations

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Introduction

Writing geographic information systems (GIS) learning content requires careful consideration of various components to ensure learner success. Considerations for content that reflects equity and inclusivity in the scenario's narrative and tone is often overlooked, but it is especially important when a scenario includes historically marginalized and vulnerable populations. The Learn ArcGIS team at Esri conducted a comprehensive evaluation to revise lessons for narratives, language, and tone that elevated marginalized communities in a dignifying manner. The process led to the development of a guiding document for racial equity and inclusivity standards and a new process to review and ensure new learning content continues to meet the same criteria.

The gallery of lesson in Learn ArcGIS, hereafter referred to as "Learn", consists of over 300 step-by-step, scenario-based lessons that walk users through a wide range of ArcGIS products and GIS workflows (Esri Learn ArcGIS, 2022). In the past two years, the team more than doubled in size and a Quality Assurance and Quality Control (QA/QC) team was established to focus on content consistency and quality. Learn also increased collaboration efforts with Esri's Racial Equity and Social Justice (RESJ) team during this time. Learn's growing gallery of lessons, the addition of new and diverse team members, and strengthening partnership with the RESJ team organically led to a new process for reviewing, revising, and creating learning content with RESJ workflows.

Methods

During a monthly collaboration meeting, three members of Learn with academic and practitioner experience in applying RESJ workflows to GIS and several members of the RESJ team meet to strategize and advance RESJ learning content. Several of the RESJ team members serve as leaders for internal, ethnic-specific employee resource groups (ERGs) at Esri, and one member holds a certification for Diversity, Equity, and Inclusion in the Workplace. During these collaborative meetings, decisions based on consensus advanced the development of RESJ content for GIS and the revision and process development for RESJ review.

A gap analysis was conducted which identified lessons with scenarios related to RESJ or vulnerable communities. For these lessons, opportunities for revision or enhancement were proposed and discussed at the monthly collaborative meetings. The QA/QC team developed a process to rewrite the lessons in coordination with the author and relevant stakeholders. For new lesson proposals, the QA/QC team developed guidelines and formed a RESJ review committee.

Gap analysis on the exiting content

The gap analysis identified two broad categories for rewriting lessons: enhancement or revision.

Lessons identified for enhancement did not require significant revision to the original narrative but presented a strong opportunity to add a component to the workflow that supported racial or social equity. This process primarily involved one member of the Learn team with strong academic and practitioner experience in cross-cultural awareness and social justice issues who then presented the identified lessons to the monthly RESJ collaborative meetings.

For example, the racial equity component for the lesson **Policy mapping – improve newborn health** (Lavery, 2022) was limited to showing the percent of mothers who had low birth weight babies in a web app side panel by race and ethnicity (see the left pane in Figure 1). A section was added to the lesson to calculate the rate ratio value between Black and White mothers who had babies with low birth weight, enabling an analysis that revealed the degree of racial inequality for this health outcome measure (Figure 2).
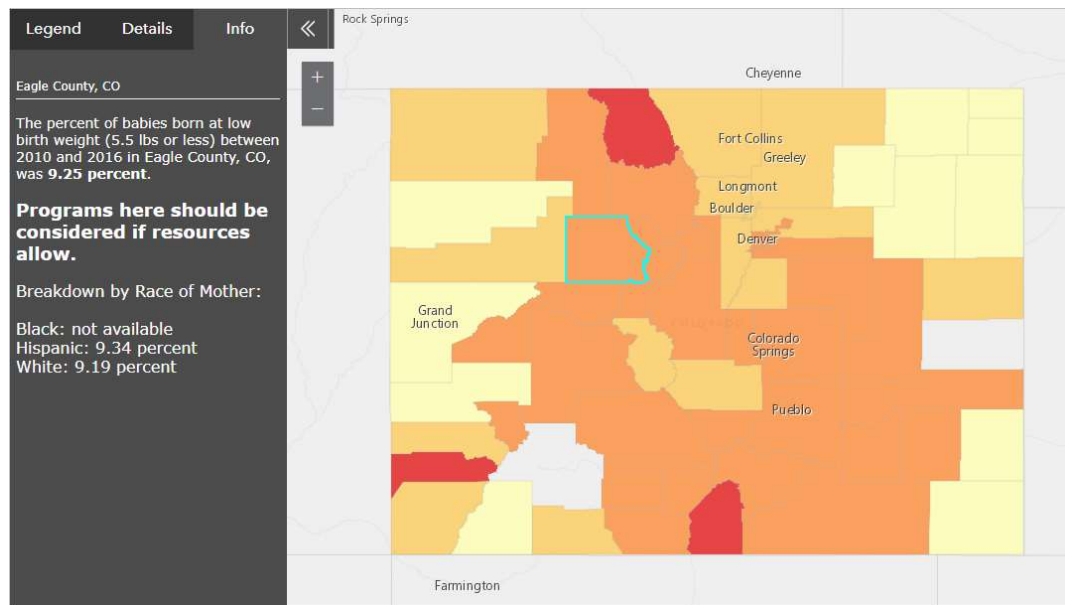

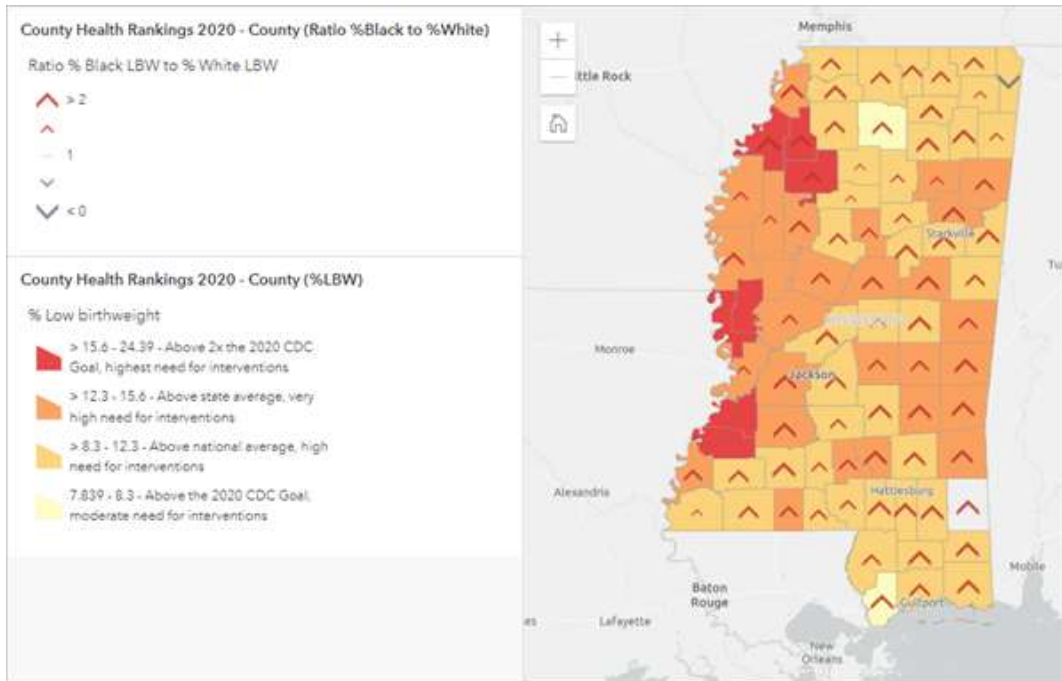Figure 1. Original resulting map for the "Policy mapping – improve newborn health" lesson.

Figure 2. Resulting map for the revised workflow of the "Policy mapping – improve newborn health" lesson.

Another example of enhancement was for the lesson **Calculate environmental equity for public policy** (Esri Learn ArcGIS, 2021). The original workflow calculated the exposure of toxic release material per capita for each tract; however, no component of the lesson analyzed race and ethnicity data. Sections were added to calculate the toxic burden experienced by each census tract by race and poverty level. Results of the findings were displayed using ArcGIS Dashboard in a manner relevant to local policy makers (Figure 3).
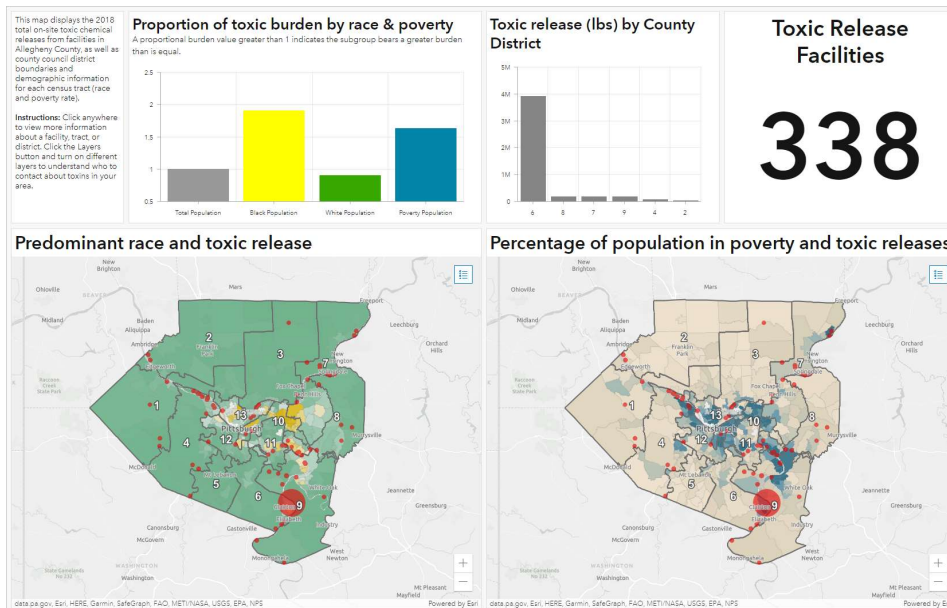

Figure 3. Resulting Dashboard app for the revised workflow of the "Calculate environmental equity for public policy" lesson.

Lessons that required revision had scenarios that were not appropriate because they used terminology or had an underlying narrative or tone that perpetuated a harmful or prejudiced perspective of a vulnerable community.

Lessons with scenarios involving people experiencing homelessness originally contained narratives framing the issue as a nuisance and a burden. Phrases like *combating homelessness*, *burden*, *expensive*, and *problem*, were used to describe and at times over-emphasizing the issues of a complex problem primarily from the perspective of those who are housed. One narrative emphasize how healthy, well-paid workers were experiencing homelessness. While unintentional, such language implied individuals who were employed and not ill did not deserve to experience homelessness and are more eligible to receive aid. To correct this narrative, the tone and scenario was adjusted to shift focus on the local government's lack of a robust housing policy to accommodate the influx of workers. Terms like *opportunity*, *support*, and *access* were used to focus on solutions.

Another lesson requiring revision guided users to design a map of the United States military bombing missions in Vietnam during the Vietnam War. The narrative focused on creating a commemorative poster with beautifully designed cartographic features. It did not mention the impact the war on families in Vietnam. Depending on one's experiences, the lesson may seem harmless and simply a scenario on American history. But to others, it may be a painful reminder of the trauma of war. The lesson was ultimately rewritten for a completely different scenario.

Developing the rewrite process for enhancement and revision proposals

The QA/QC team developed a process to provide structure and set expectations to rewrite lessons identified for enhancement or revision (Figure 4). First, a rewrite proposal form was developed to outline the business case and proposed workflow for the changes. The completed form is sent to the original lesson author and relevant stakeholders after which additional feedback may be provided. Then the author signs the proposal to accept the recommendations. Optionally, further discussions may be scheduled to discuss the changes. The changes are incorporated into the lesson, and the updated version is sent back to the author and stakeholders for review. This process may require several iterations. When a completed rewritten version is ready, it is copy edited and published.
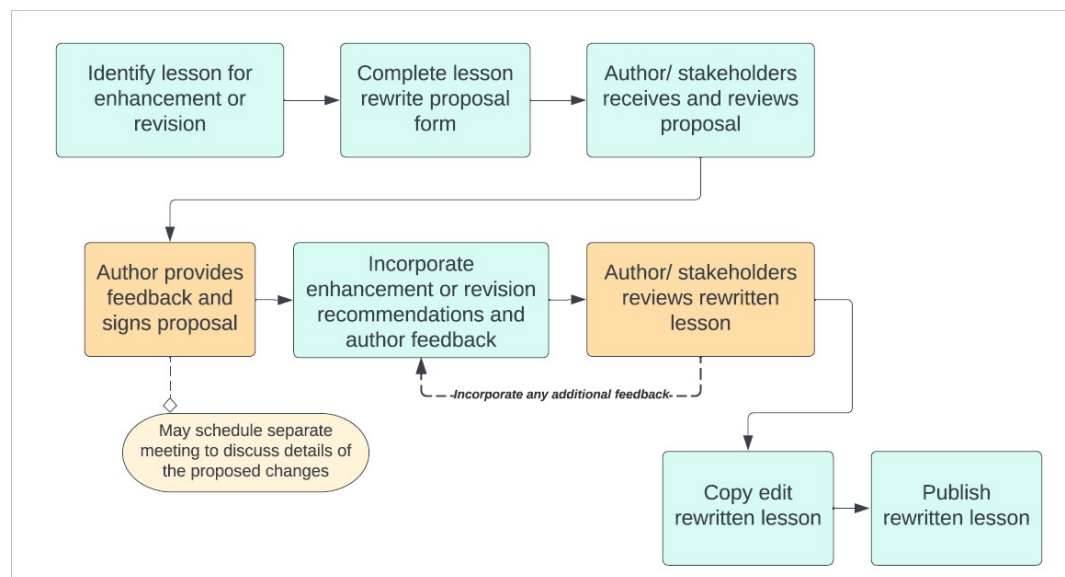
Figure 4. Diagram of the rewrite process for lessons identified for enhancement and revision of lessons

Development of a review process for new lessons

For new lesson proposals, three components were developed. The internal lesson proposal form now requires the author to specify if a proposed lesson involves RESJ communities. A guideline document was developed, and the updated proposal form directs authors to review and comply with the guidelines. Finally, a RESJ support committee was established to provide additional insight for RESJ lessons.

The guideline document was developed in collaboration with Esri's RESJ team and establishes expectations for content with RESJ scenarios (Table 1). Narrative elements include identifying the target audience; considering how the subject is described; and considering tone and perspective relative to the subject. Inclusivity elements include using appropriate terminology and descriptions for race, ethnicity, and culture; using best practices for unbiased language; considering cross-cultural and lingual translation; being mindful of historical contexts; and acknowledging limitations when exploring equity considerations.

Narrative element	Description
Target Audience	The audience is specific and identifiable. Is the narrative relevant, understandable, and the appropriate level of complexity for the target audience?
Subject	Is it prosperity oriented? What or who should be included or excluded?
Tone	What is the most appropriate and equitable emotional undertone?
Perspective	Whose point of view is the information presented in? Does it consider a global audience?

Inclusivity element	Description
Race, Ethnicity, and Culture terminology	Uses appropriate terms for race and ethnicity categories, relevant to specific region.
Language	What types of words are best understood? Represent best/emerging practices? Is unbiased language used to describe identities and vulnerable communities?
Cultural Translation	Use of appropriate terminology, structure, stories and symbols for the audience.
Historical Context	Does the language use appropriately acknowledge any relevant historical context with credible sources, without minimizing potential impacts of those historical events/policies?
Limitations	Include acknowledgement of analysis limitations and offer additional workflows or questions to continue exploring equity dynamics in outcome.

Table 1: Learn ArcGIS Lesson Inclusivity and Racial Equity guidelines.

The RESJ support committee is comprised of Learn and RESJ team members to review proposals marked for RESJ workflows. The committee reviews and provides recommendations to authors who choose to integrate RESJ workflows in their lesson (Figure 5).
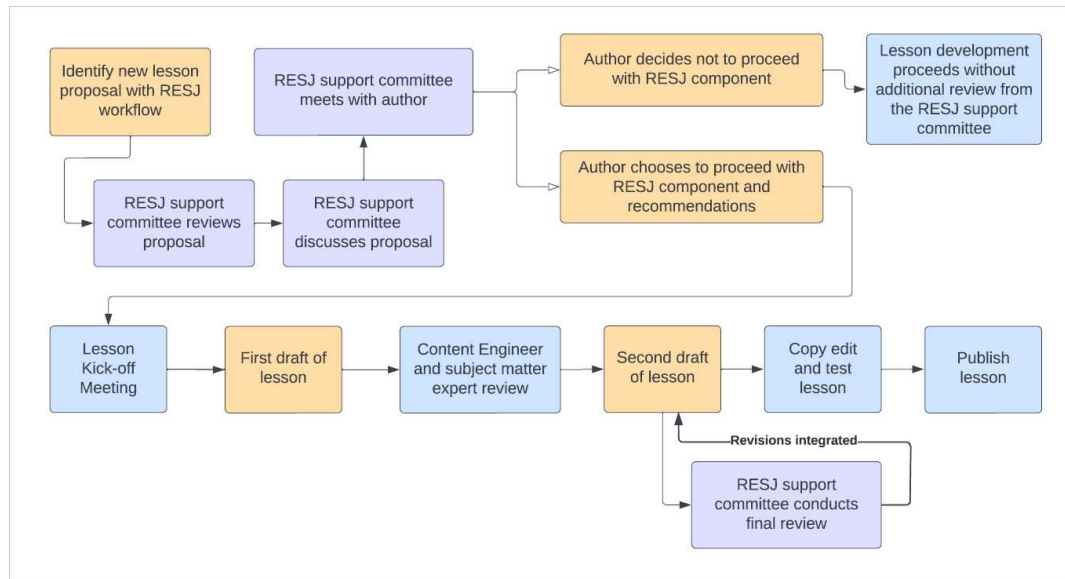

Figure 5. Diagram of new lesson development process for workflows involving a racial equity and social justice scenario or population.

Results

Responses to content revisions

Generally, there were three types of responses when an author is notified that a lesson has opportunity for enhancement or revision.

The first is a hesitant resistance. At first, authors communicate that the changes do not seem necessary or justified. There may be a time limitation to address the recommendations, or the review was unexpected. A hesitant resistance response was often resolved with follow-up conversations to explain there was risk of the content being perceived as tone-deaf or even offensive to certain groups of people if left unresolved. Providing draft text also encouraged acceptance of revisions.

The second type of response is a strong resistance in which an author rejects the recommendations. While the least common response, it is valuable to pursue dialogue and communicate the benefits of the revision. To resolve a strong resistance response, a committee approach provides a diversity of perspectives and voices to communicate why the revisions are necessary. However, if constructive dialogue or resolution is not possible, the lesson development may need to be tabled.

The third type of response is one of enthusiastic gratitude. Most authors respond to recommendations for RESJ considerations with no reservations about adding to or revising their content. Such collaborators often express gratefulness for the insight of RESJ subject matter experts and see great value in making their content more relevant and appliable to a wider range of learners.

Revision and guideline process outcomes

By implementing the RESJ review and rewrite process, 15 lessons were rewritten, creating reliable, vetted learning resources for the RESJ and other Esri teams to showcase RESJ GIS workflows. The rewritten lessons have been used as RESJ training for workshops, conferences and for curriculum packages seeking equity workflows. The new process has enabled the development of several new lessons and vetted proposals that there were not in line with the developed standards.

Discussion and Conclusion

Several key insights emerged from developing the RESJ lesson development process. We learned that rewriting existing content required much more effort compared to developing new content. The process highlighted the value of soft skills, or interpersonal skills, such as empathy, optimism, and open-mindedness in developing content and during rewrite conversations. Having a diverse team with varying insights greatly contributed to the process. Every person, group, culture, and organization will have blind spots in their perspectives and assumptions. But a diverse team can offer multiple approaches to resolving challenges and reduce the number of blind spots.

Recommendations

- Invest in cross-cultural awareness and communication training.
- Invest in communication skills training for challenging topics. The Crucial Conversations method is highly recommended.
- Develop a team specifically for RESJ for a dedicated focus on validation, discussion, and decision making related to RESJ topics.
- Most importantly, embody and model a posture of learning. The journey of social conscientious is a lifelong process. No one will ever fully arrive. Cultivate a culture of humility, openness, and curiosity.

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