



# **SOCIAL NETWORK ANALYSIS USER GUIDE**

## TABLE OF CONTENTS

What is a Social Network Analysis.....	3
Why Create a Social Network Analysis.....	3
What is Kumu.....	3
Basic Kumu Terminology.....	3
What Information can SNA Provide.....	4
Why The Literacy Coalition of Central Texas Created a SNA.....	5
Information The Literacy Coalition of Central Texas’ SNA Provides.....	5
Data Collection.....	5
Plans for the Future.....	6
How to Navigate The Literacy Coalition of Central Texas’ SNA.....	7
Definitions of Element Types.....	7
Definitions of Connection Types.....	7
How to Interact with the Map.....	9
Filtering by Element Type.....	10
Filtering by Element Tag.....	11
Filtering by Connection Type.....	13
Filtering by Connection Tag.....	14
Filtering by Multiple Types and Tags.....	15

## **What is a social network analysis?**

Social network analysis (SNA) is a method by which one can analyze the connections across individuals, groups or institutions. SNA allows us to examine how political actors or institutions are interrelated, and focuses on interactions, or relationships, instead of on individual behavior.

There are three different levels of social analysis that are determined by the scope and information included:

*Ego networks* include data on a respondent (individual or organization) and the people or organizations they are connected to.

*Partial networks* extend slightly beyond the ego network, with some amount of tracing to reach contacts of contacts. It is something less than a full account of connections among all pairs of actors in the relevant population.

*A complete or "global" network* includes data on all actors within a particular (relevant) boundary. Global networks are never exactly complete due to missing data, but boundaries are set.

## **Why create a social network analysis?**

"Goods" travel through contacts between actors, which can reflect a power distribution or influence attitudes and behaviors, and our understanding of social life improves if we account for this social space. Patterns of inter-actor contact can have effects on the spread of "goods" or power dynamics that could not be seen focusing only on individual behavior. Social network analysis can help us improve organizational effectiveness (internal), can help us understand complexity and systems (external), and can help identify knowledge leaders (internal – staff, external – organizations).

## **What is Kumu?**

Kumu is a web-based application that allows users to visually map relationships and understand and talk about complex systems. "Kumu" is Hawaiian for "source of wisdom," and was created to help bring clarity to complex social problems. The founders created Kumu with the belief that our society is facing many, complex and difficult problems that can only be resolved through breaking down those complex systems to form understanding.

## **Basic Kumu Terminology**

Social network analysis and Kumu have a language all their own, and there are a lot of interchangeable terms in the lingo. Below is a list of the terms Kumu uses to describe

social network analysis that will set you up for a base understanding of how to navigate Kumu and our map.

*Element:* Elements are the actors in the map, which, in this case, are the organizations. Elements are depicted as colored circles.

*Connection:* Connections describe the relationship between two elements, or actors. Connections are depicted as colored lines that run between the elements.

*Type:* Types exist for both elements and connections, and are created by the user. Types are used to categorize the element or connection. Each element and connection can only have one type.

*Tag:* Tags are similar to types, in that they categorize the element or connection. Because each element and connection can only have one type, tags allow the user to further categorize the elements and connections. Each element and connection can have multiple tags.

*Decoration:* Decorating is Kumu's term for applying rules to elements and connections. Decoration rules change the physical appearance of the element or connection.

*Filter:* Filtering lets you change your map view by selecting which elements, connections, types, and tags you want to include or exclude in the view.

### **What information can SNA provide us (in Kumu)?**

Kumu allows users to run metrics that help break down these systems and identify areas for solution creation. Below is a list of the metrics users can run in Kumu, what they measure, and their importance.

*Degree:* Degree measures the number of connections for a given element, and identifies local connectors and hubs. Elements with a high degree are not always the most influential or connected to the wider network

*Closeness centrality:* Closeness centrality measures the distance from one element to all other elements and identifies those with high visibility about what's happening across the network. These people, or organizations can quickly spread information (good or bad) across the network.

*Betweenness centrality:* Betweenness centrality measures the number of times an element lies on the shortest path between two other elements, and identifies key bridges, or those who control the flow of information across a network. These people or organizations may be bottlenecks or single points of failure.

*Indegree*: Indegree measures the number of incoming connections for an element. Elements with high indegree are the leaders, looked to by others as a source of advice, expertise, or information.

*Outdegree*: Outdegree measures the number of outgoing connections for an element. Elements with high outdegree can reach a high number of elements and spark the flow of information across a network (but may not be the most efficient at spreading the information).

*Reach (two-step out)*: Reach (two-step out) measures the portion of the network within two steps of an element. Elements with high reach can spread information through the network through close friend-of-a-friend contacts.

*Reach efficiency*: Reach efficiency normalizes reach by dividing it by size (number of neighbors). Elements with high reach efficiency are less connected but gain more exposure through each direct relationship.

### **Why The Literacy Coalition of Central Texas created a SNA**

We wanted to focus more externally on our partners and reassess how we interact with them and how they interact with us in order to help us better serve them. The SNA allows us to map our partners visually by our programs, and provides an easy to understand landing place for all partnership information.

### **Information The Literacy Coalition of Central Texas SNA provides**

- How many partners do we have?
- Who are our partners?
- What organizations partner with each program?
  - How does that program partner with each organization?
  - Is our relationship with that organization reciprocal or one-directional? Which direction?
- Which partners are local vs. national?
- What sectors do our partners fall under (religious, non-profit, public, education, business)?
- What partnerships are current vs. past?
- What organizations help us facilitate our partnerships? How?
- Which partners are we most connected to (multiple program connections)?

### **Data Collection**

All program managers/directors were asked to provide a list of the organizations they have partnered with, both past and present. Relevant partners included any

institution in any sector that provided or received a good from The Literacy Coalition of Central Texas, as long as that good extended beyond funding. This data was then imported into Kumu to create the SNA.

As part of this list, staff were asked to include the following information about that partnership:

- Start and end (if applicable) date of the partnership.
- Which direction “goods” flowed through this relationship (The Literacy Coalition of Central Texas provides partner goods, partner provides The Literacy Coalition of Central Texas goods, or goods flow in a reciprocal manner).
  - “Goods” included anything from curriculum, fees, support, host sites, recruitment, trainings, etc.
- A brief description of the relationship.

### **Plans for the future**

Our current SNA is almost entirely egocentric, meaning it tells us how we interact with our partners, and how they interact with us, but it does not tell us how our partners interact with each other, or other organizations outside of Literacy Coalition of Central Texas’ network.

As a first step, we would like share our SNA with our partners and teach them how to navigate it. From there, we would like to work with our partners to teach them more about social network analysis and the value both organizationally and socially, as well as teach them about Kumu as a tool to help simplify this process.

We have created an additional guidebook to help our partners navigate Kumu to be able to create their own social network analysis, and plan to use the Annual Provider Meeting as a platform to begin this discussion with our partners and help them become more knowledgeable and savvy in SNA and Kumu.

As a next step, we would like to work with our partners, collecting data to be able to create a true global SNA in the context of literacy, which will give us a true picture of all the players involved in literacy provision in Central Texas. The metrics mentioned above are not very useful in an egocentric network because there are no knowledge leaders or hubs to be found. These metrics become incredibly useful in a global SNA. We could begin to determine who our knowledge leaders are in this issue area, who our network hubs are, and how to best spread “goods,” amongst many other key findings that will help us better work together and provide services.

Ultimately this information would allow The Literacy Coalition of Central Texas to better serve our partners, as well as allow our partners to have a better picture of the network in which they operate. The findings gathered from a global network analysis could help

us leverage our resources more efficiently, and more effectively partner with one another, as well as expand our current network as individual organizations.

- Example: Caritas may in the future want to further connect their clients to vocational education programs. A global SNA would allow them to essentially search for vocational organizations and see who in their network already has relationships with these organizations that they would then be able to leverage.
- Example: Valuable information may become available that would be pertinent for the larger non-profit community to be aware of, though The Literacy Coalition of Central Texas may have limited resources to spread that information. The SNA would allow us to identify hubs (organizations that are widely connected) to allow us to focus on informing these hub organizations, knowing that the information will then be spread further throughout the network.

### **How to navigate The Literacy Coalition of Central Texas' SNA**

When you open your link, it will bring up a version of our SNA that you can both look at and interact with. You have the ability to filter your view and even change the way elements and connections look. Anything you change will only change on your version, not on ours, so please feel free to play around.

A window on the left-hand side of the screen will bring up a brief description of our map and what you can do with it. This will include:

- Purpose of the map
- **Definitions of element types (sectors)**
  - **Non-Profit Sector:** Organizations with non-profit status that serve clients directly and/or support organizations that do
  - **Business Sector:** For-profit businesses
  - **Education Sector:** Organizations whose primary purpose is education, including community, public, and private colleges, public school systems, and public charter schools
  - **Public Sector:** Organizations and agencies that are established and run by a governmental body including those governmental bodies themselves, state hospitals, state/county agencies, and public library systems
  - **Religious Sector:** Organizations whose primary purpose is religious gathering and services
- **Definitions of connection types (The Literacy Coalition of Central Texas programs)**
  - **Literacy Forward:** The Literacy Coalition of Central Texas offers free training sessions for instructors and volunteers new to teaching English as a Second Language and Adult Basic Education, or for those just looking

for a refresher. Training sessions are held on consecutive Saturdays throughout the year and are open to both staff and volunteers in Central Texas. We offer both English Forward for ESL Instructors and Adult Basic Literacy Forward for ABE instructors. English Forward partners with programs nationally to help them adopt the English Forward training system and improve the instruction in their programs.

- **English at Work:** English @ Work seeks to maximize human potential and economic mobility by sending paid instructors into workplaces across Central Texas—a unique approach to bringing English lessons to those who are motivated to learn and prepared to succeed. Our instructors use our one-of-a-kind curriculum customized to the workplace and to students’ job descriptions.
- **AmeriCorps VISTA:** The program recruits and places 26 national service members into nonprofits across Texas to build organizational capacity through program evaluation, grant writing, fundraising and outreach activities.
- **Texas Family Literacy AmeriCorps:** Our collaborative AmeriCorps program recruits and places 50 national service members into nonprofits and local government agencies in Austin and Houston to teach English as a Second Language, Adult Basic Education, early-childhood literacy, parenting and GED preparation.
- **The Learning Center:** The Learning Center offers multiple levels of free, adult basic education and high school equivalency classes during the day and evening. Instruction is customized to meet the needs of each individual student, is self-paced, and includes a job readiness program for anyone looking for a better job, entering the workforce for the first time, or re-entering the workforce after some time off. The program is designed to help our students obtain and retain gainful employment, and serves as a demonstration center for adult education programs across the community to pilot promising practices and spread proven teaching strategies and curriculum.
- **Workforce Infusion:** Our collaborative workforce training program operates in our partner agencies hosting AmeriCorps members. Workforce Infusion provides evidence-based curriculum to help adults explore career pathways and build workforce focused communication skills, while also receiving a workforce readiness credential after participating in additional workforce training and exploration including soft-skills training, resume preparation, mock interviews, computer literacy and job shadowing.
- **PALS:** Play and Learning Strategies, or PALS, is a proven parent engagement program operated in partnership with schools and



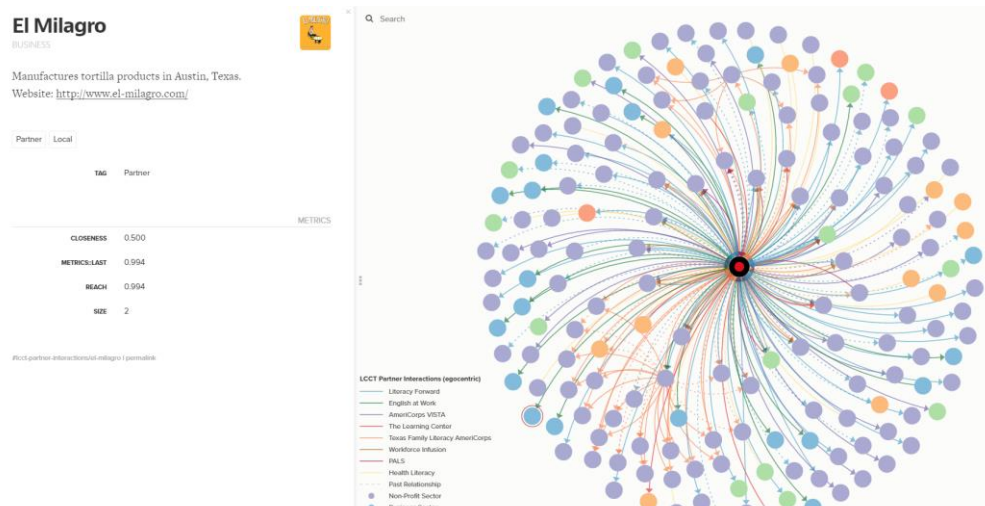
community-based organizations to improve parents' ability to ensure their children enter kindergarten ready. Through weekly sessions with coaches, parents of young children learn how to support their children's cognitive and social-emotional development.

- **Health Literacy:** Health literacy refers to an individual's capacity to obtain, process and understand basic health information and services needed to make appropriate health decisions and follow instructions for treatment. The Literacy Coalition of Central Texas provides services that improve communication for healthcare, nonprofits, organizations, agencies, individuals and coalitions that improve patient-provider communications throughout the healthcare continuum.
- Basic instructions on how to navigate the map

There is a key on the map to show you what each element color, connection color, and connection line type represents

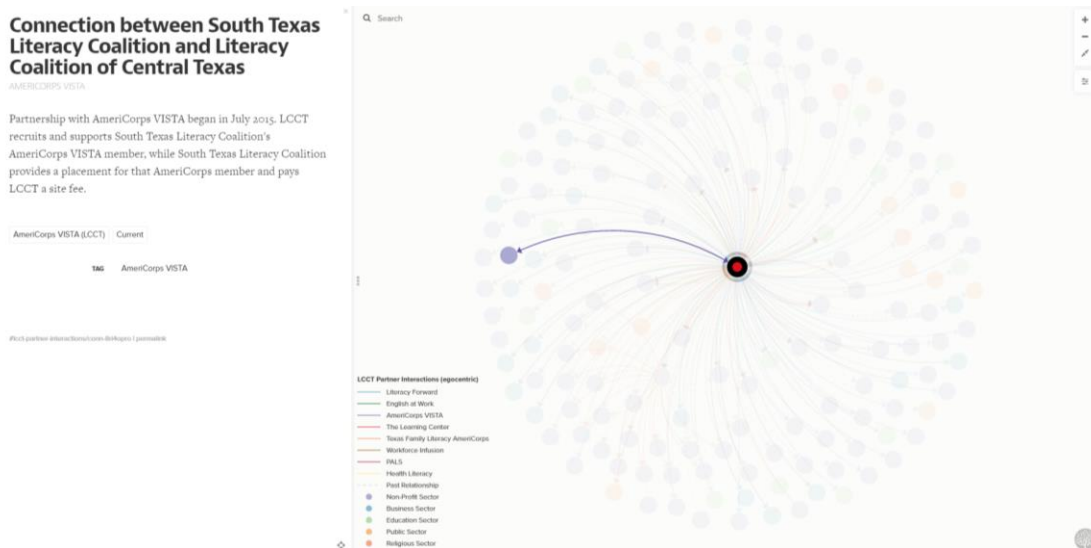
### How to interact with the map

- Click on any element (partner – denoted by colored circles) to get information about who that organization is
  - A window on the left hand side of the screen should appear with the following information:
    - Name of organization
    - Type of organization (sector)
    - Organization's mission
    - Organization's website
    - Organization's logo
    - Whether the organization is local or national



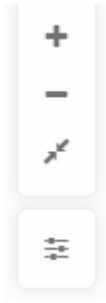
**Figure 1** Example of when you select an element in Kumu.

- Click on any connection (programs – denoted by colored lines) to get information about how The Literacy Coalition of Central Texas partners with each organization
  - A window on the left hand side of the screen will appear with the following information:
    - Names of the two organizations connected
    - Connection type (The Literacy Coalition of Central Texas program)
    - Brief description of the relationship
    - Whether the relationship is current or past



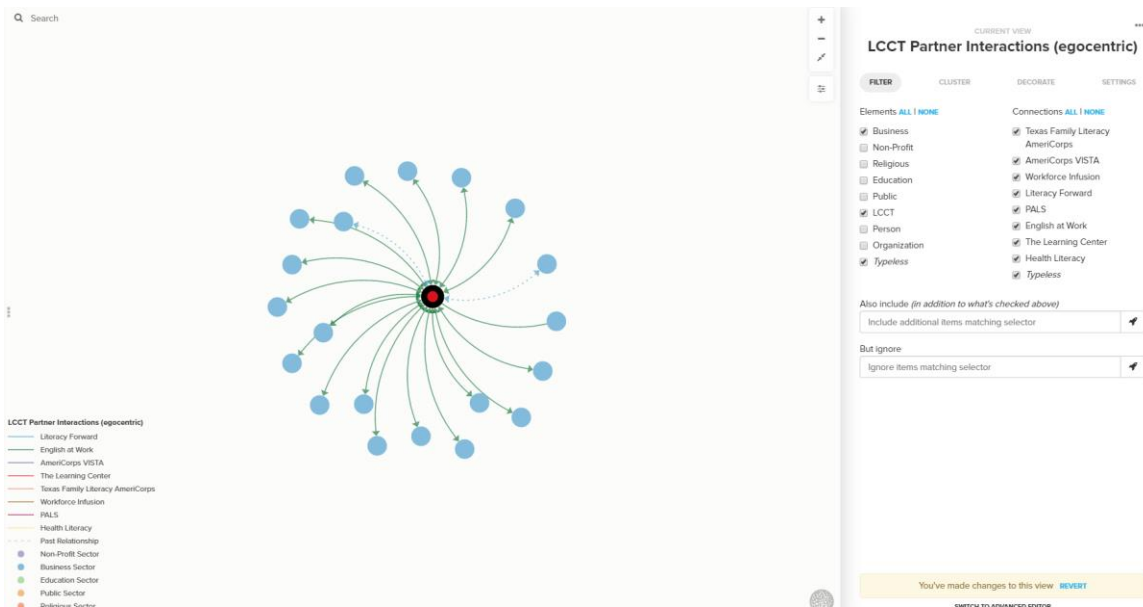
**Figure 2** Ex. Example of when you select a connection in Kumu

- **Filtering** – you can filter by element and connection type as well as tags to get an easier to digest, and more specific view of our relationships
- **Filtering by element type**
  - In the upper right hand corner of the map are 4 buttons (see Figure 3)
  - The top two allow you to zoom in and out
  - The third will automatically zoom to fit the whole SNA on the screen
  - The fourth takes you to the setting menu which will open on the right hand side of you screen
  - Once in the setting menu, click the “Filter” tab on the top left
  - On the left you will see a list of all the element types, with all types checked
  - Uncheck boxes to remove those element types from the map’s view
    - The Literacy Coalition of Central Texas is typed separately as “LCCT” to ensure it, nor the connections disappear when filtering – **Always leave the “LCCT” element type checked**



**Figure 3** 4 buttons in Kumu. Top two are zoom in and zoom out. Third zooms to fit SNA on screen. Bottom button is Settings.

- **Example (see Figure 4):** If you want to only see The Literacy Coalition of Central Texas partners in the business sector, follow these steps
  - Click on the settings menu button – 4<sup>th</sup> on the upper right hand corner of the map
  - Click the “filter” tab
  - Uncheck all element types except “Business Sector” and “LCCT”
  - Leave all connection types checked
  - This will show you how all The Literacy Coalition of Central Texas programs that are connected to partners in the business sector



**Figure 4** Example of filtering by element type in Kumu

- **Filtering by element tag**
  - Elements have also been tagged as either local or national partners
  - To filter local or national, follow these steps
    - Click on the settings menu button – 4<sup>th</sup> on the upper right hand corner of the map
    - Click the “filter” tab
    - Scroll to the bottom to the fields labeled “Also include” and “But ignore”
    - Select the “Also include” field
    - A Selector Builder window will pop up with three fields

- In the first field (left) click the drop-down menu and select **“tags”** not “tag”
- Leave the middle field “is”
- Click in the third field (right) and type in “local” or “national” and click on it when it pops up
  - Your selection will be the one you want to show in the map
- Click “Use Selector”
- In the filter tab of the settings menu select the “But ignore” field
- The same window will pop up
- In the first field (left) select “tags”
- Keep the middle field “is”
- In the third field (right) type “local” or “national” and click on it when it pops up
  - Your selection will be the one you do not want to show in the map
- Click “Use Selector”
- **Example (See Figures 5a, 5b, 6):** If you only want to see national partners, follow these steps:
  - Click on the settings menu button – 4th on the upper right hand corner of the map
  - Click the “filter” tab
  - Leave all element and connection types checked
  - Scroll to the bottom to the fields “Also include” and “But ignore”
  - Select the “Also include” field (see Figure 5a)
  - A Selector Builder window will pop up with three fields
  - In the first field (left) click the drop-down menu and select **“tags”** not “tag”
  - Leave the middle field “is”
  - Click in the third field (right) and type in “national” and click on it when it pops up
  - Click “Use Selector”
  - In the filter tab of the settings menu select the “But ignore” field (See Figure 5b)
  - The same window will pop up
  - In the first field (left) select “tags”
  - Keep the middle field “is”
  - In the third field (right) type “local” and click on it when it pops up

- Click “Use Selector”

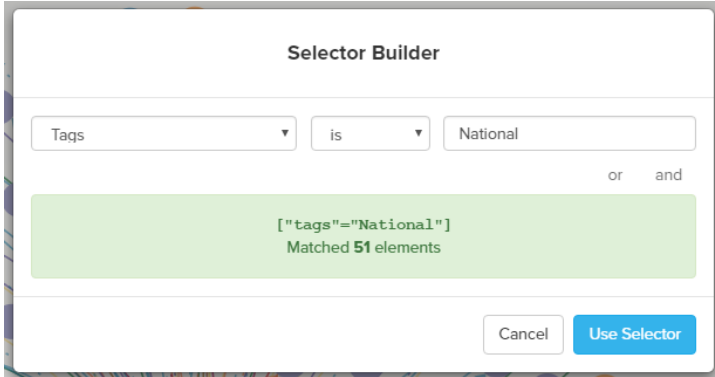


Figure 5a Also Include selector

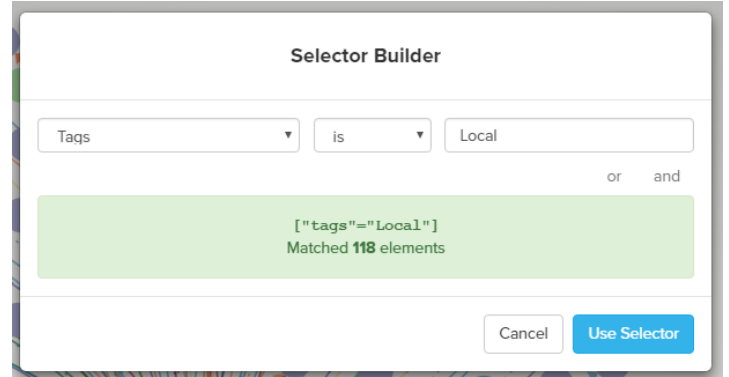


Figure 5b But Ignore selector

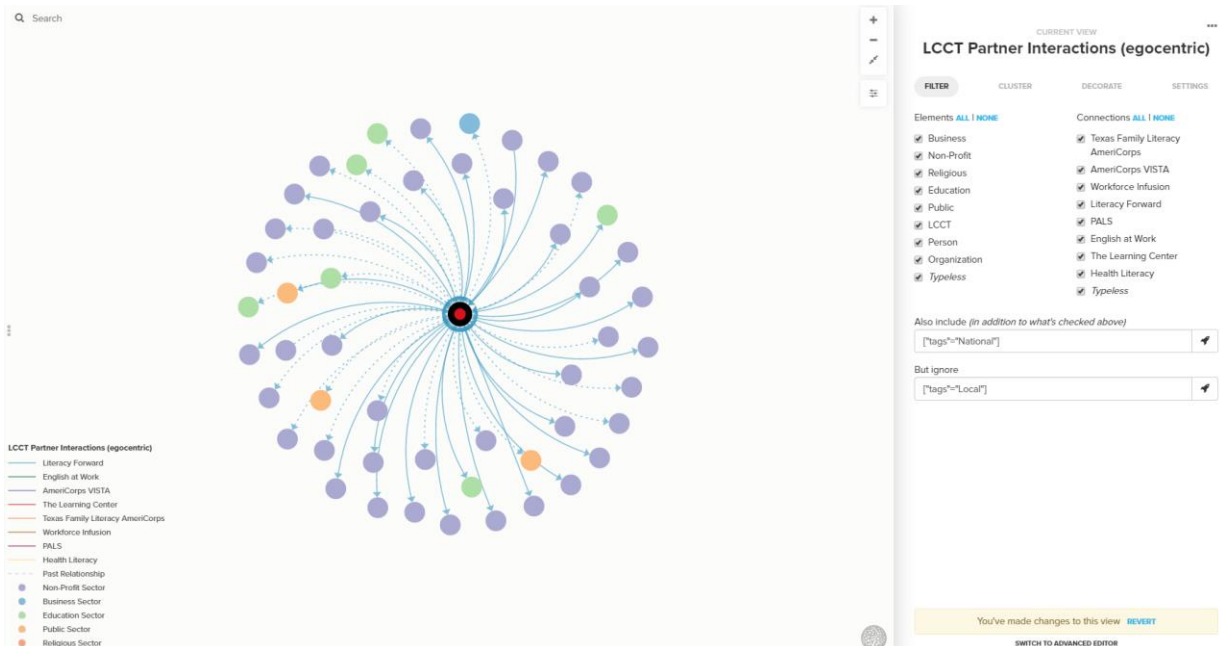


Figure 6: Filtering by Element Tag

- **Filtering by connection type**
  - In the upper right hand corner of the map are 4 buttons.
    - The top two allow you to zoom in and out
    - The third will automatically zoom to fit the whole SNA on the screen
    - The fourth takes you to the setting menu which will open on the right hand side of you screen
  - Once in the setting menu, click the “Filter” tab
  - On the right-hand side you will see a list of all the connection types with all types checked
  - Uncheck boxes to remove that connection type from the map’s view

- Example: If you wish to only see which organizations The Literacy Coalition of Central Texas partners with through our PALS program, follow these steps:
  - Click on the settings menu button – 4<sup>th</sup> on the upper right hand corner of the map
  - Click the “filter” tab
  - Uncheck all connection types except “PALS”
  - Leave all element types checked
  - This will show you all organizations that are connected to The Literacy Coalition of Central Texas partners with through our PALS program
- **Filtering by connection tag**
  - Connections have also been tagged as “current” or “past” relationships
  - To filter by status of relationship, follow these steps:
    - Click on the settings menu button – 4<sup>th</sup> on the upper right hand corner of the map
    - Click the “filter” tab
    - Scroll to the bottom to the fields “Also include” and “But ignore”
    - Select the “Also include” field
    - A Selector Builder window will pop up with three fields
    - In the first field (left) click the drop-down menu and select “**tags**” not “tag”
    - Leave the middle field “is”
    - Click in the third field (right) and type in “past” or “current” and click on it when it pops up
      - Your selection will be the one you want to show in the map
    - Click “Use Selector”
    - In the filter tab of the settings menu select the “But ignore” field
    - The same window will pop up
    - In the first field (left) select “tags”
    - Keep the middle field “is”
    - In the third field (right) type “past” or “current” and click on it when it pops up
      - Your selection will be the one you do not want to show in the map
    - Click “Use Selector”
      - Example: If you wish to only see partners The Literacy Coalition of Central Texas currently has a relationship with, follow these steps:
        - Click on the settings menu button – 4<sup>th</sup> on the upper right hand corner of the map

- Click the “filter” tab
- Scroll to the bottom to the fields “Also include” and “But ignore”
- Select the “Also include” field
- A Selector Builder window will pop up with three fields
- In the first field (left) click the drop-down menu and select “**tags**” not “tag”
- Leave the middle field “is”
- Click in the third field (right) and type in “current” and click on it when it pops up
- Click “Use Selector”
- In the filter tab of the settings menu select the “But ignore” field
- The same window will pop up
- In the first field (left) select “tags”
- Keep the middle field “is”
- In the third field (right) type “past” and click on it when it pops up
- Click “Use Selector”
- **Filtering by multiple types and tags at once**
  - You can filter by both element and connection types, and tags simultaneously, as well as filter by several at once.
  - Example: If you wish to see all past, local partners in the non-profit sector who partner with The Literacy Coalition of Central Texas through both AmeriCorps programs, follow these instructions:
    - Click on the settings menu button – 4<sup>th</sup> on the upper right hand corner of the map
    - Click the “filter” tab
    - Under the element types list, check only “LCCT” and “Business Sector”
    - Under the connection types list, check only “Texas Family Literacy AmeriCorps” and “AmeriCorps VISTA”
    - Scroll to the bottom to the fields “Also include” and “But ignore”
    - Select the “Also include” field
    - A Selector Builder window will pop up with three fields
    - In the first field (left) click the drop-down menu and select “tags” not “tag”
    - Leave the middle field “is”
    - Click in the third field (right) and type in “past” and click on it when it pops up

- Under the third field (right) click the button that reads “and”
- Another set of three fields will pop up
- In the first field (left) click the drop-down menu and select “tags”
- Leave the middle field “is”
- Click on the third field (right) and type in “local” and click on it when it pops up
- Click “Use Selector”
- In the filter tab of the settings menu select the “But ignore” field
- The same window will pop up
- In the first field (left) select “tags”
- Keep the middle field “is”
- In the third field (right) type “current” and click on it when it pops up
- Under the third field (right) click the button that reads “and”
- Another set of three fields will pop up
- In the first field (left) click the drop-down menu and select “tags”
- Leave the middle field “is”
- Click on the third field (right) and type in “national” and click on it when it pops up
- Click “Use Selector”
- **Important note:** If you have made any changes to the view, at the bottom of the settings menu it will read “You’ve made changes to this view REVERT”
- You can always click “REVERT” to go back to the original view