

US University & College Ancestry Visualizations

THOMAS KOUTSIDIS, JULIA HOA NGUYEN, OLUSINA OJEWOLA, MACKENZIE ROSS, AND
KEERTHANA REDDY VARAKALA



Background

The Carneige Classification of Institutions of Higher Education is the leading framework for tracking and describing institutional diversity.

The framework began in 1973 and has been updated a total of ten times.

- Update Years: 1973, 1976, 1987, 1994, 2000, 2005, 2010, 2015, 2018, and 2021
- It is widely used in the study of higher education to represent differences in the institutions and design of research studies

Insight Needs

The clients are looking to:

Understand and identify the changes of institutional statuses to create a more comprehensive list of institutions

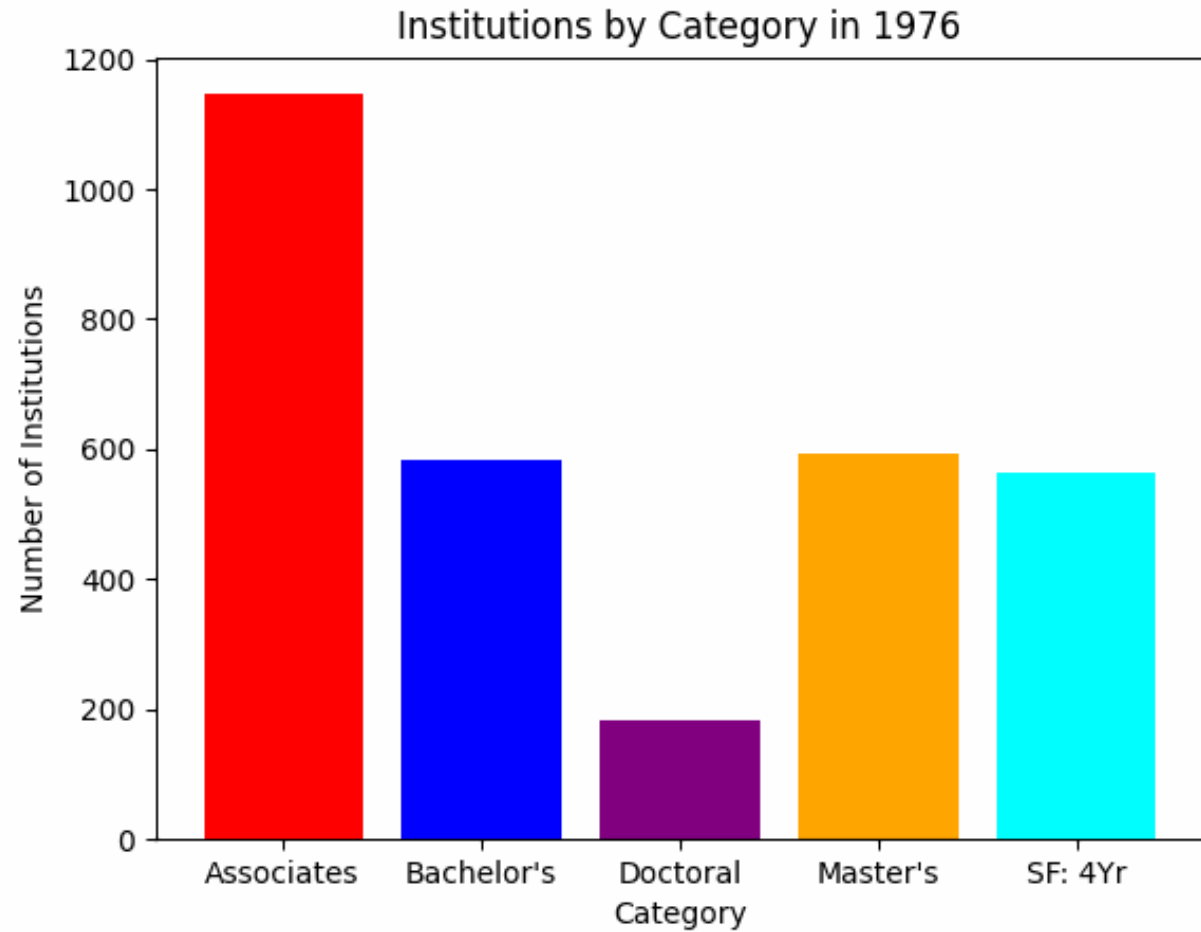
Visualize the evolution of program sub-category labels classifications to provide insights for students, policymakers, and researchers

Description of the Data

Column Title	Description
INSTNAME	Name of Institution (spelling may vary and name changes occur)
UNITID	Institution's Unique Identifier
All Updates	Binary value whether institution appears in all 10 updates (1 = yes, 0 = no)
STATE	State where institution is located
CITY	City where institution is located
YEAR	Classification/Update year
VALUE	Numerical Classification Value
YrValKey	Combines the year and numerical classification value to obtain classification label
CATEGORY	Label of classification for the year
IDYrKey	Combines the UNITID and Year to link to information on state from "INSTNOT..." files
SubCatLbl	Sub-Category label for institution classification
GrpLbl	Group label for institution classification
Status	Institution status
LinkUnit	UNITID of institution that was merged into or came out of
Notes	Any notes from the individual who tracked status

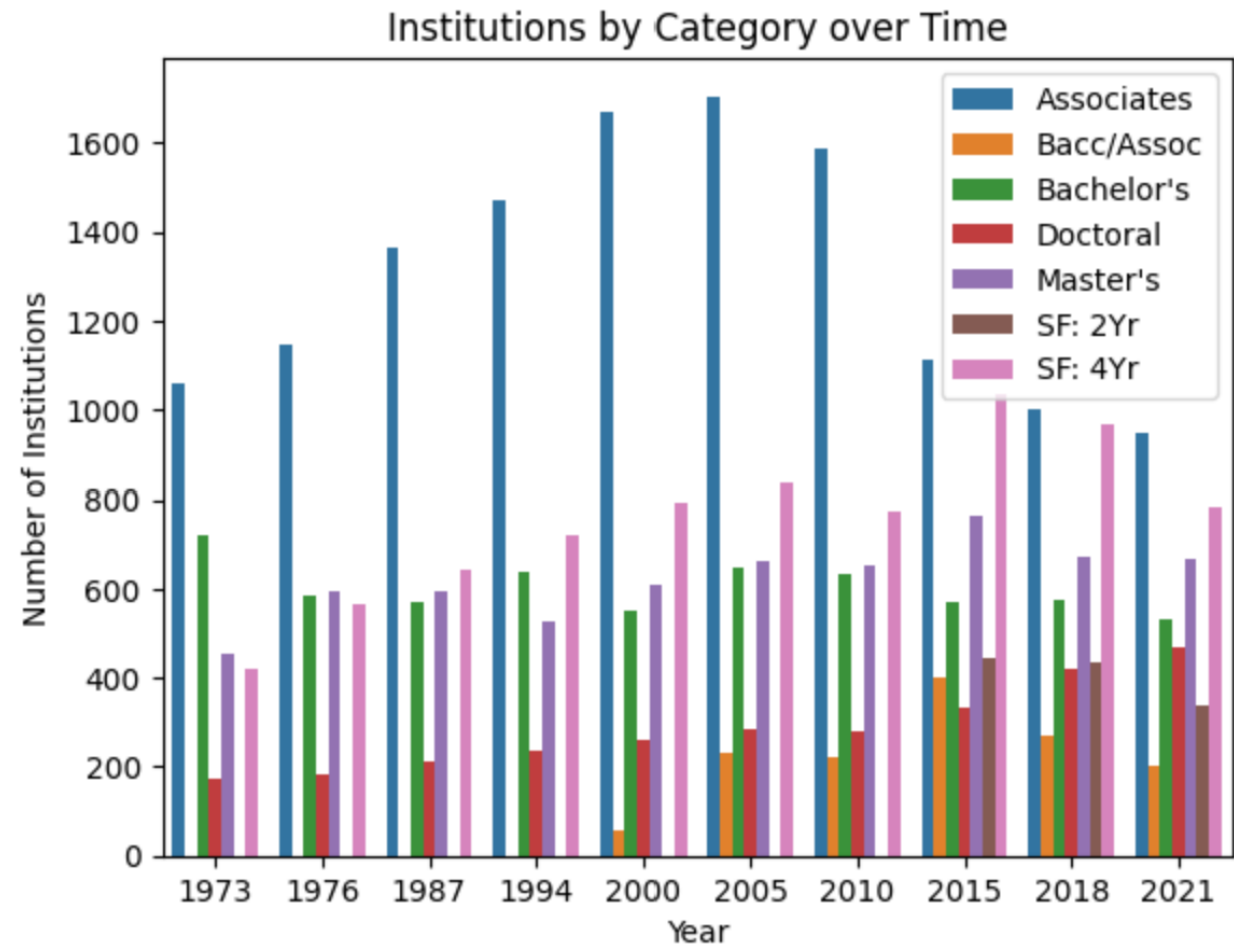
Animation for Institutions throughout the years

In this animation, we
animated the Number
of Institutions
throughout the years.



Visualization for Categories

In this visualization, we can see the number of Institutions under different categories.



Simple Statistics

The dataset has 38,811 rows of data, with each row including the following information:

- Name of the institution
- Institution's unique ID
- City and State
- Year of data entry
- Value
- Category
- Sub-category label

Count of Institutions by Group Label Classification in Each Year

	2021	2018	2015	2010	2005	2000	1994	1987	1976	1973
Associates	948	1000	1113	1587	1705	1669	1471	1366	1146	1060
Bach/Assoc	202	269	403	220	229	57				
Bachelor's	531	575	572	634	647	552	637	572	583	718
Doctoral	468	422	334	282	283	261	236	213	184	173
Master's	667	672	763	652	663	610	529	595	594	453
SF: 2Yr	340	435	444							
SF: 4Yr	782	965	1036	775	838	793	722	641	565	421
N/A				483	26		25			
Grand Total	3938	4338	4665	4633	4391	3942	3620	3387	3072	2825

Cont.

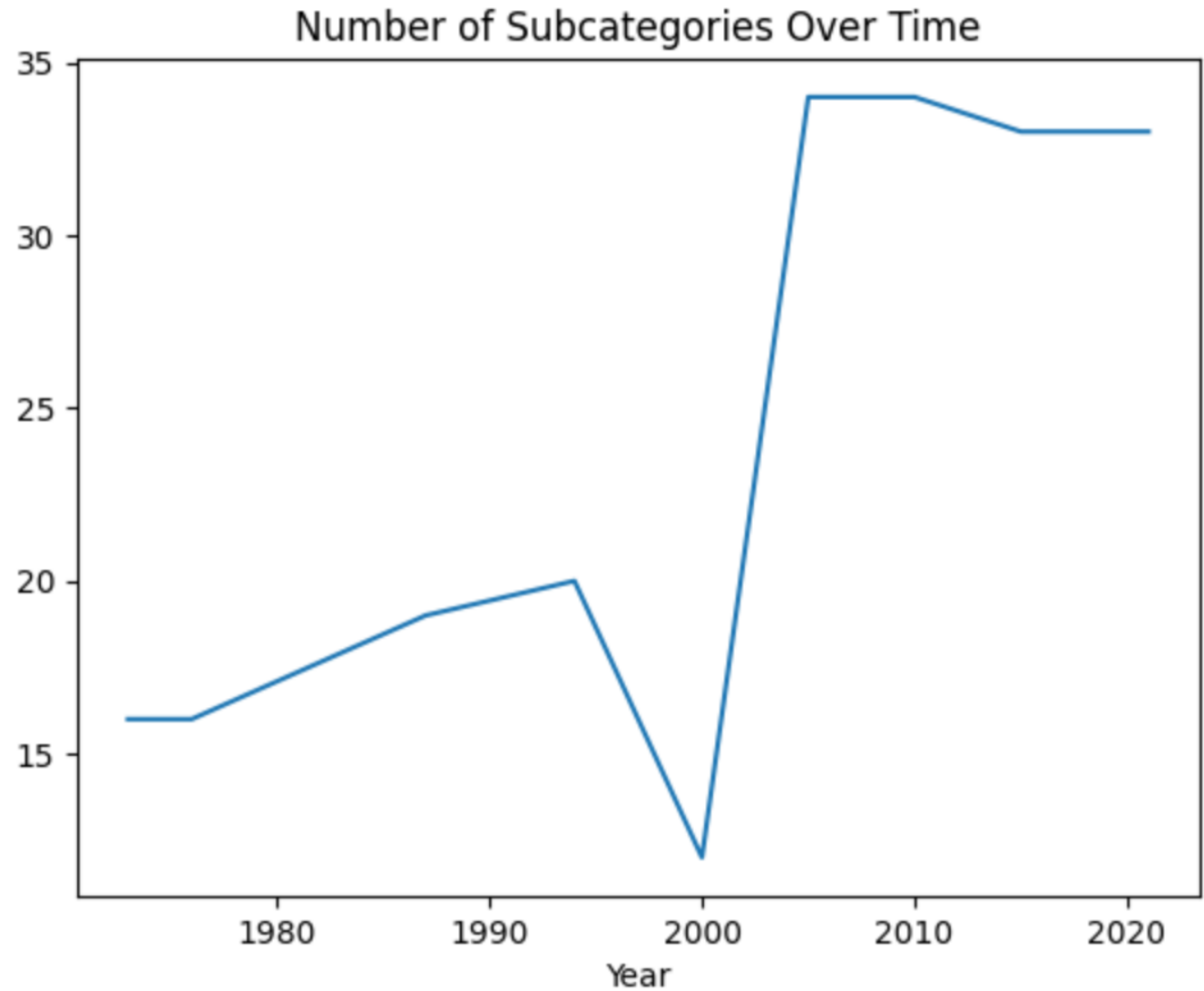
Number of entries per category:

Category Number	Label	Number of entries
0	Error: Not In Universe	534
1	Doctoral	2856
2	Master's	6198
3	Bachelor's	6021
4	Bacc/Assoc	1380
5	Associates	13065
6	Special Focus: 2 YR	1219
7	Special Focus: 4 YR	7537

Different "Status" entries:

Label	Number of entries	Definition
-2	0	Not yet born
-4	1064	Dead no survivors
-5	76	Stopout
-6	448	Merged into/Related to
-7	1	Return
-8	0	Born out of
-9	17	Name change

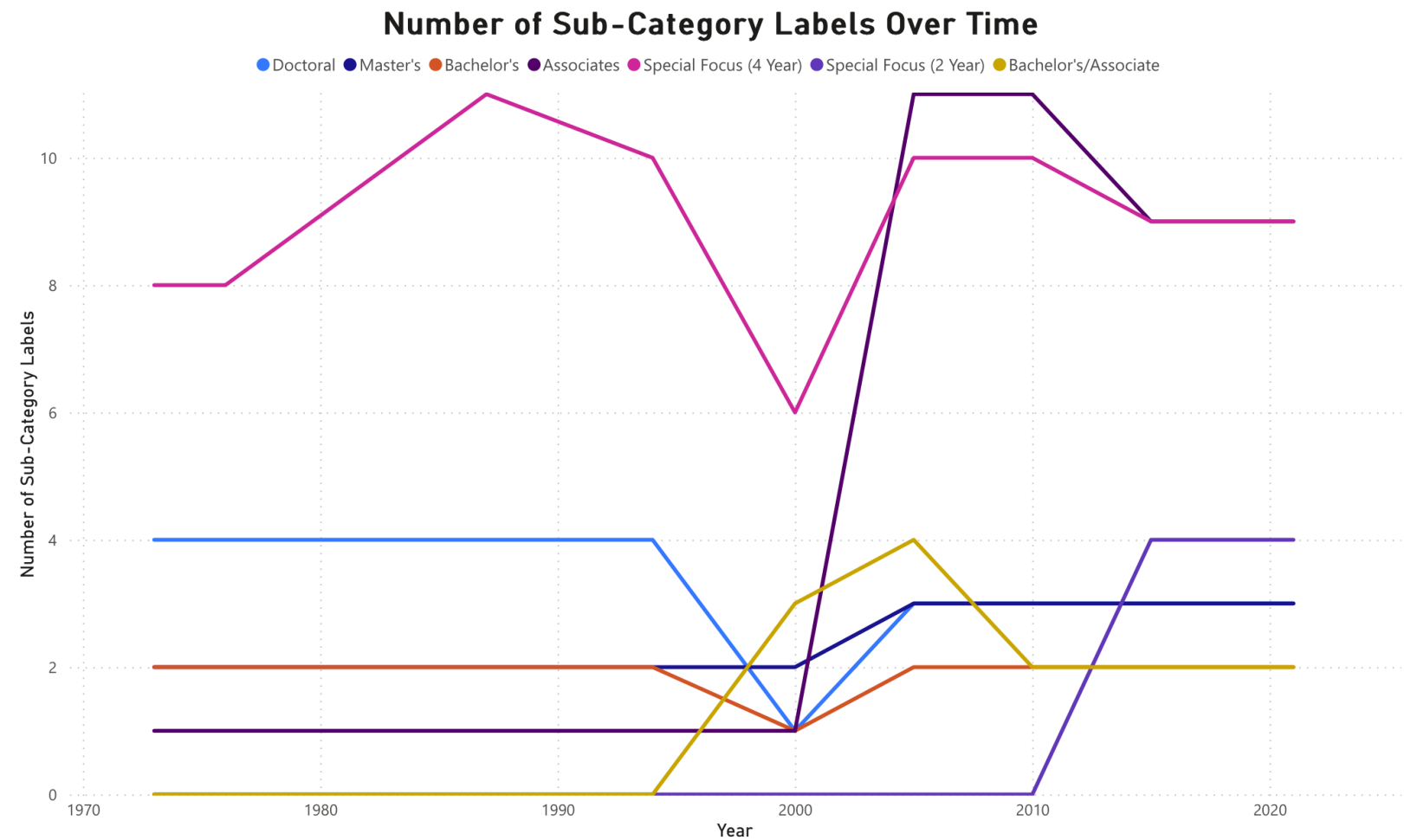
Line graph to show the change in the number of subcategories throughout the years

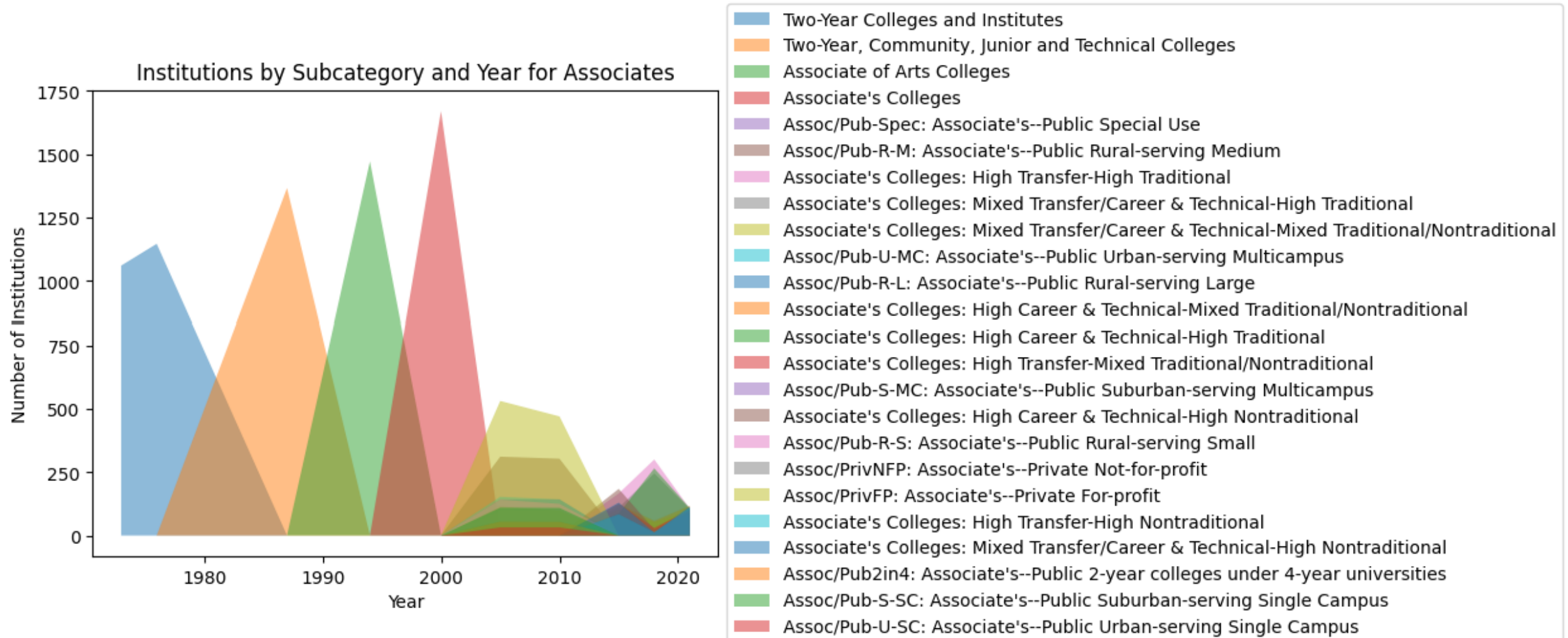


Change in Number of Sub-Category Labels by Program

Observations

- 2000 was a major restructuring year for sub-category labels in all programs
- The Associates Program had the greatest change in number of sub-category labels, increased from 1 label in the 2000 update to 11 in the 2005 update
- For all programs, the number of sub-category labels has not changed since the 2015 update

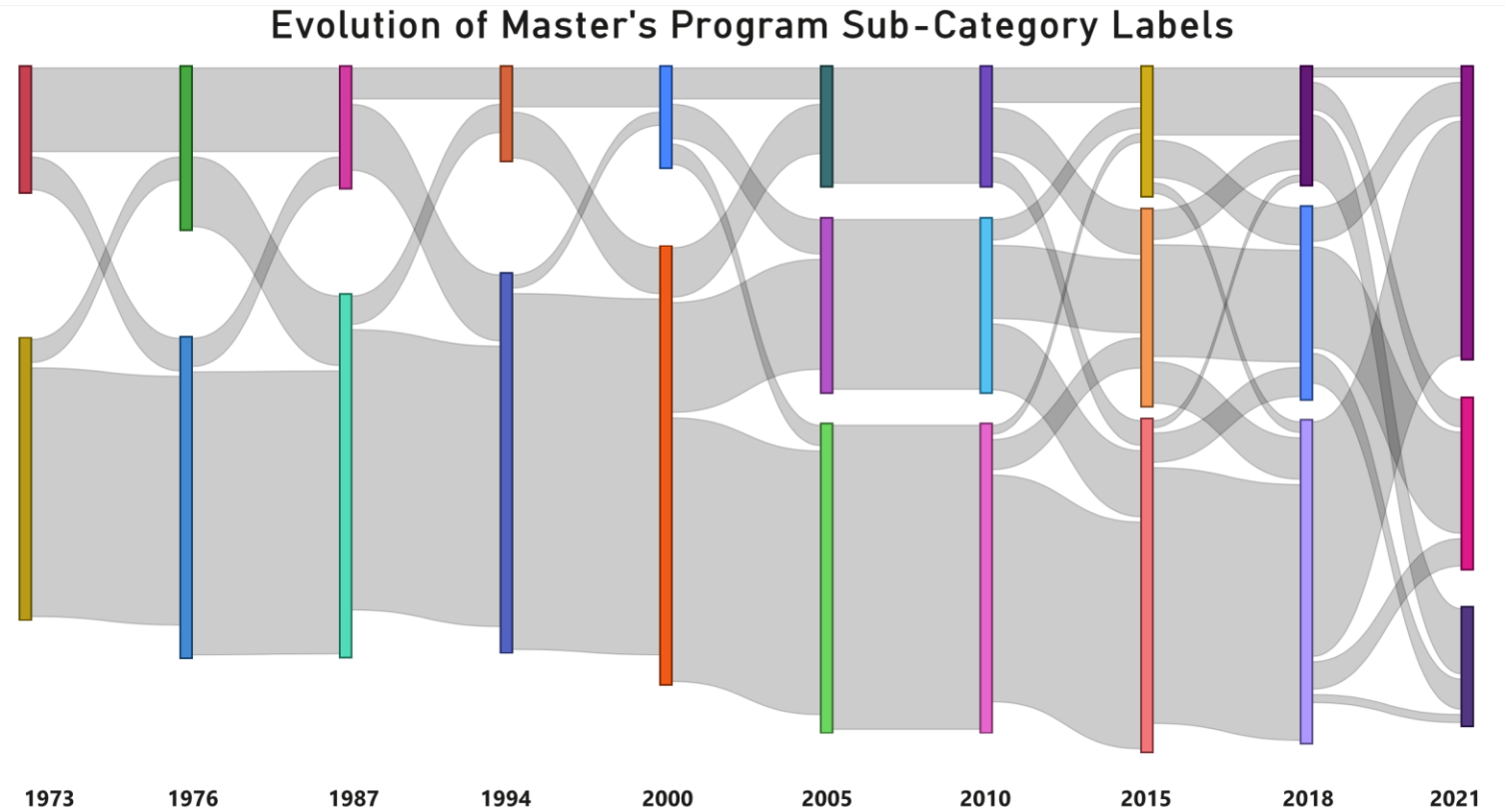




A stacked area chart showing the number of Institutions by Subcategory and Year for the Associates category.

Example of Sankey Diagram

To the right is a Sankey diagram created in Power BI that illustrates the flow of institutions between the Master's sub-category labels



[Link to Interactive Diagram](#)

Key Insights

The number of degree programs tracked by the CCIHE has increased during the time period in question (1973-2021).

Special Focus Two-Year programs have only been tracked since 2015.

The CCIHE has tracked Doctoral, Master's, Bachelor's, Associates, and Special Focus Four-Year programs for the entire time.

Almost every update has the change in the number of Subcategories under each category.

The CCIHE update in 2000 saw the biggest change of subcategory labels in all categories.

There were 534 universities that did not exist in Carnegie's classification universe due non-accreditation or non-degree granting throughout their 48 years of tracking.