**From College Boards to Dashboards Submission Document**

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**Date:** 2025-09-15

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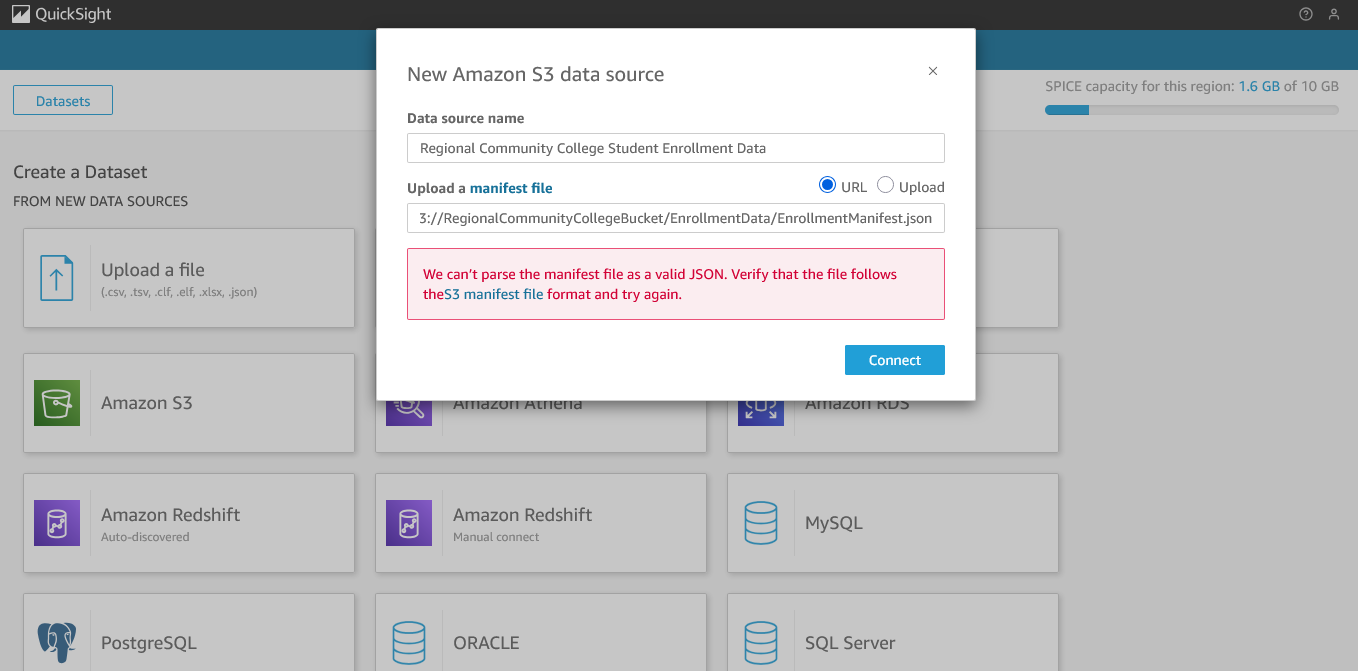
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**1. Executive Summary**

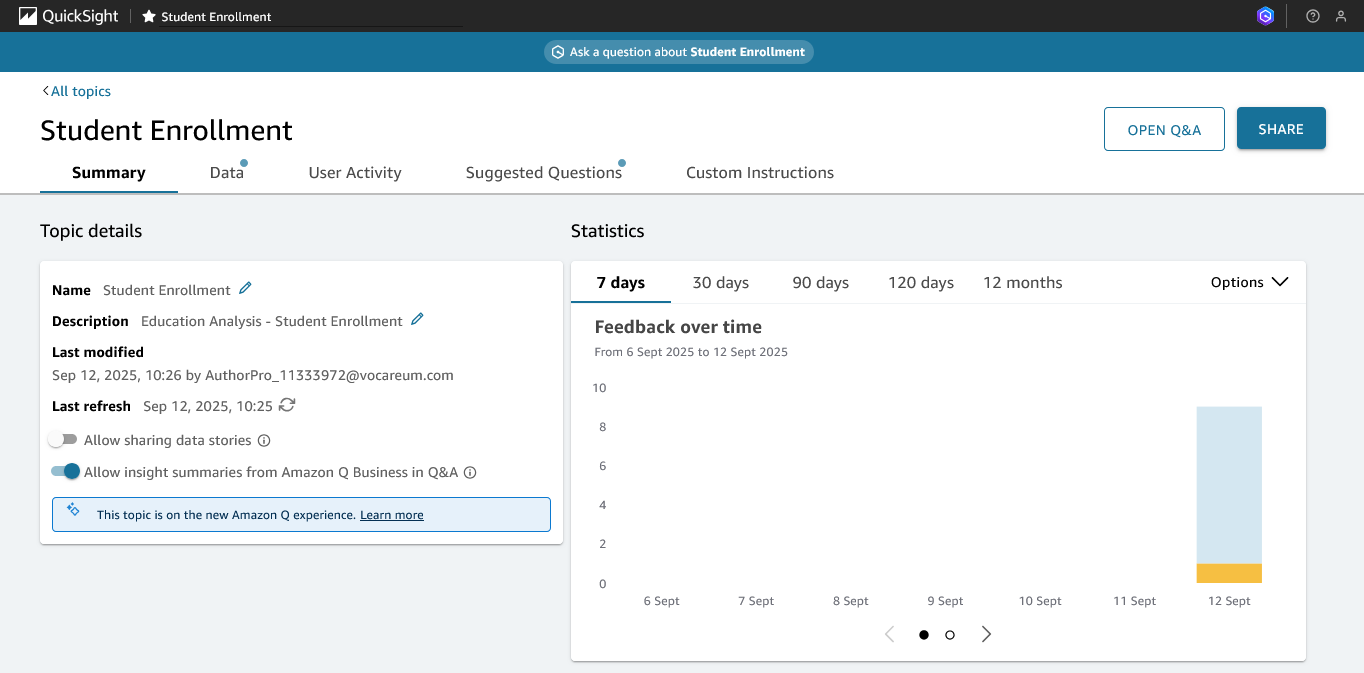
This project examines student enrollment, course costs, and professor evaluation scores to identify opportunities to improve student satisfaction without raising course costs. We used Amazon QuickSight (Q + Topics + Dashboards + Scenarios + Data Story) to: create a dataset, build visuals using Q, configure a Topic with Named Entities and Verified Questions, publish a dashboard, develop a scenario to explore the central business question, and create a final data story with recommendations.

**2. Dataset Preparation Evidence**

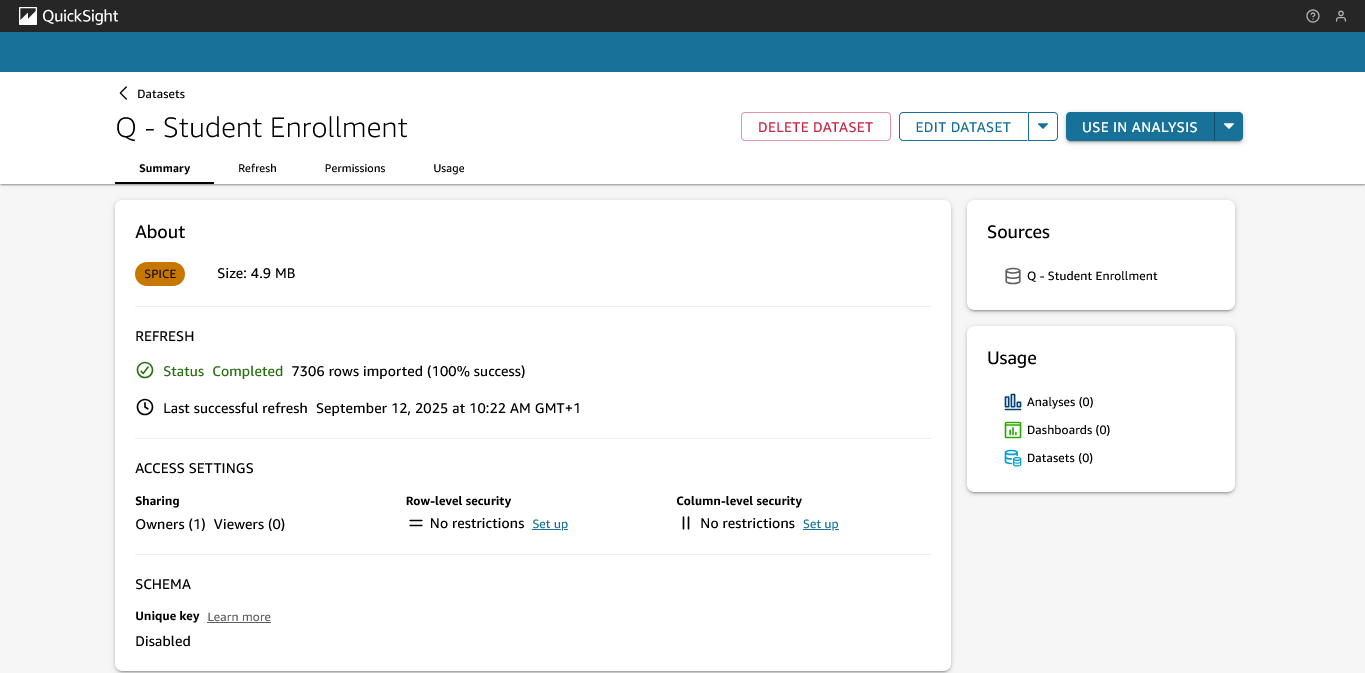
**2.1 Attempt to create dataset from S3 manifest (expected error)**

* **Action:** Attempted to create dataset using manifest s3://RegionalCommunityCollegeBucket/EnrollmentData/EnrollmentManifest.json.
* **Result:** Error — fictional bucket; dataset creation cancelled.  
  **Screenshot:**  
    
  Caption: Attempt to create dataset from fictional S3 manifest (expected error).  
  Recommended alt text: "Attempt to create dataset from fictional S3 manifest showing error."

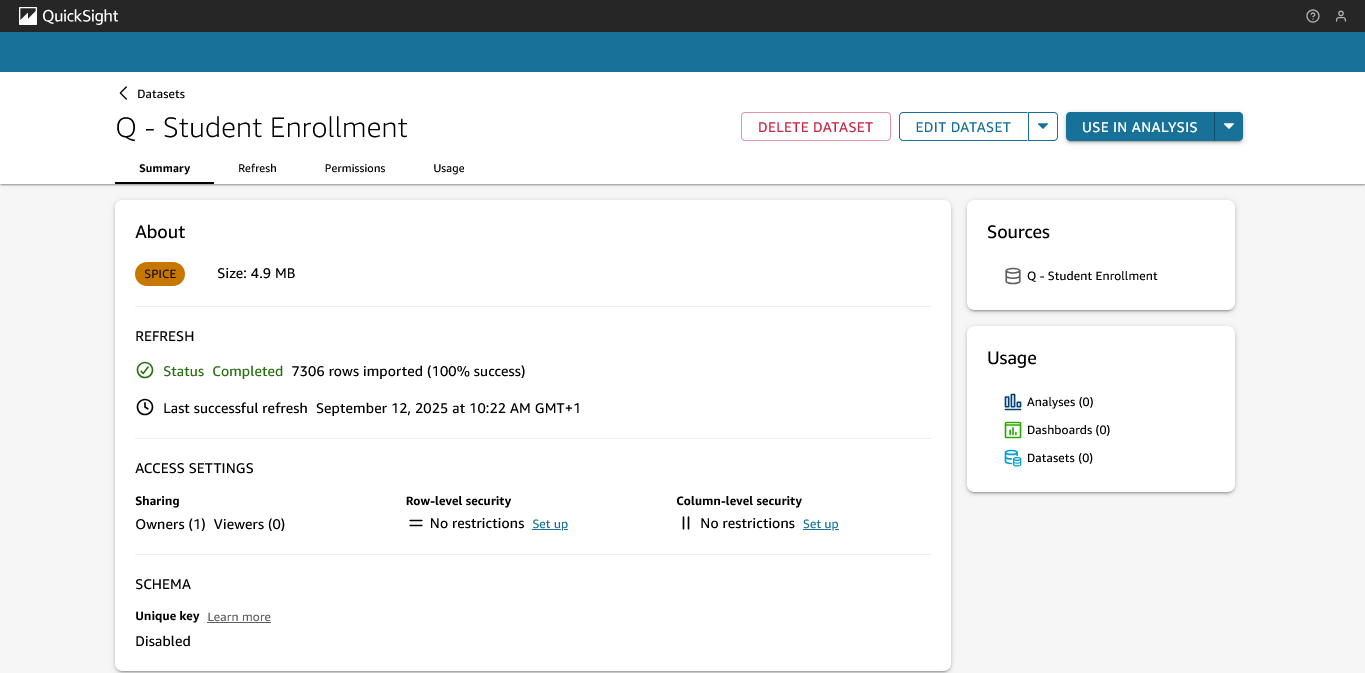
**2.2 Created Sample Topic (Student Enrollment Statistics)**

**Screenshot:**  
  
Caption: Sample Topic creation in progress.

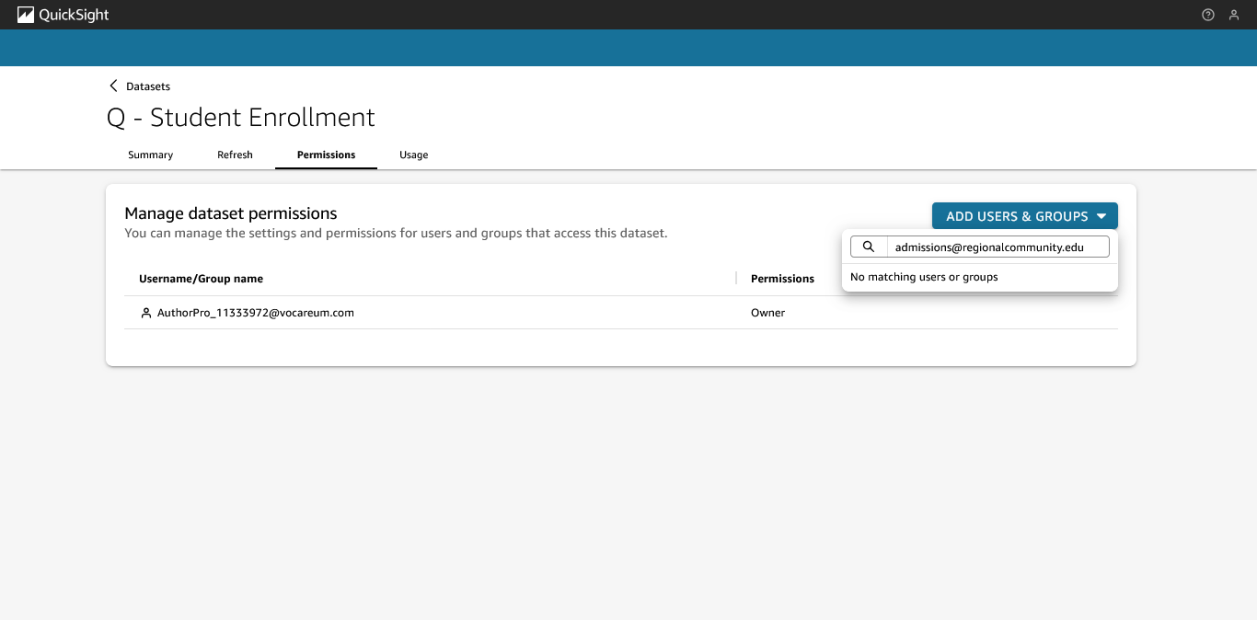
**2.3 Q - Student Enrollment dataset visible in Datasets**

  
Caption: Q - Student Enrollment dataset visible in Datasets.

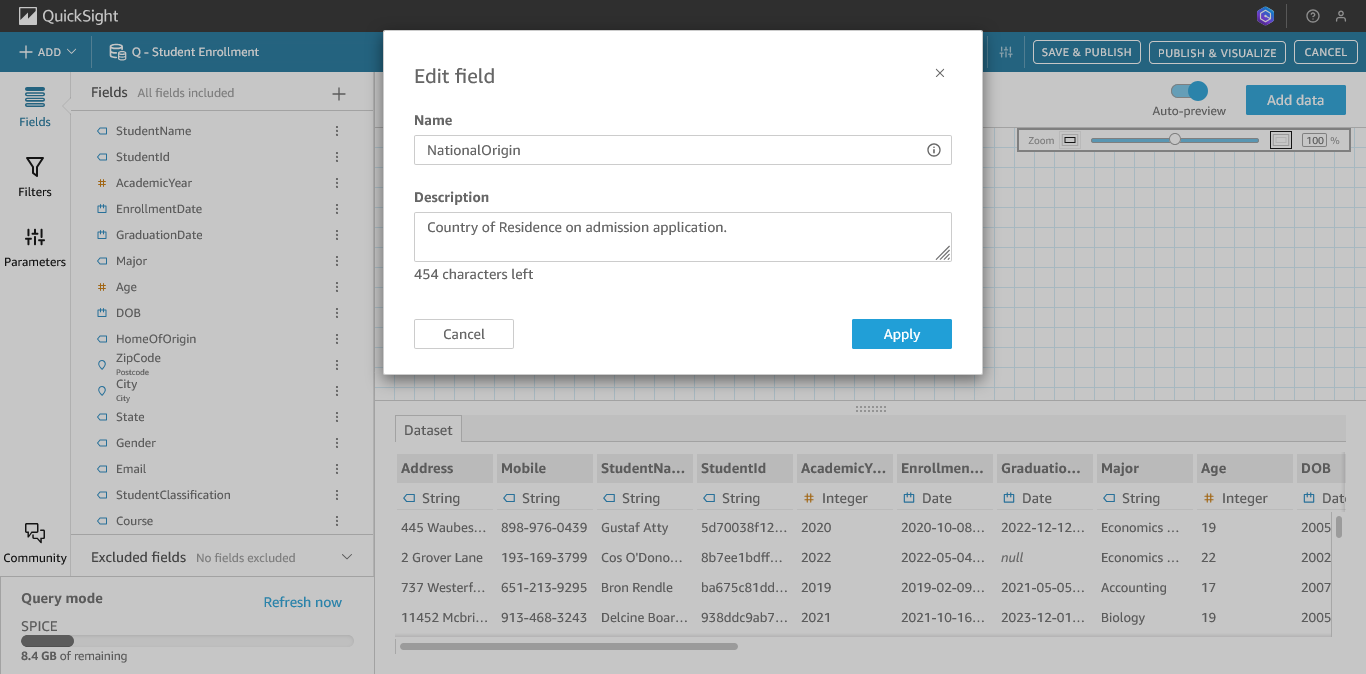
**2.4 Dataset refresh schedule (weekly Sunday 12:00 AM, local timezone)**

  
Caption: Weekly refresh schedule set to Sunday 12:00 AM (timezone visible).

**2.5 Dataset add user permission error (fictional email)**

  
Caption: Error when adding fictional user [admissions@regionalcommunity.edu](mailto:admissions@regionalcommunity.edu).

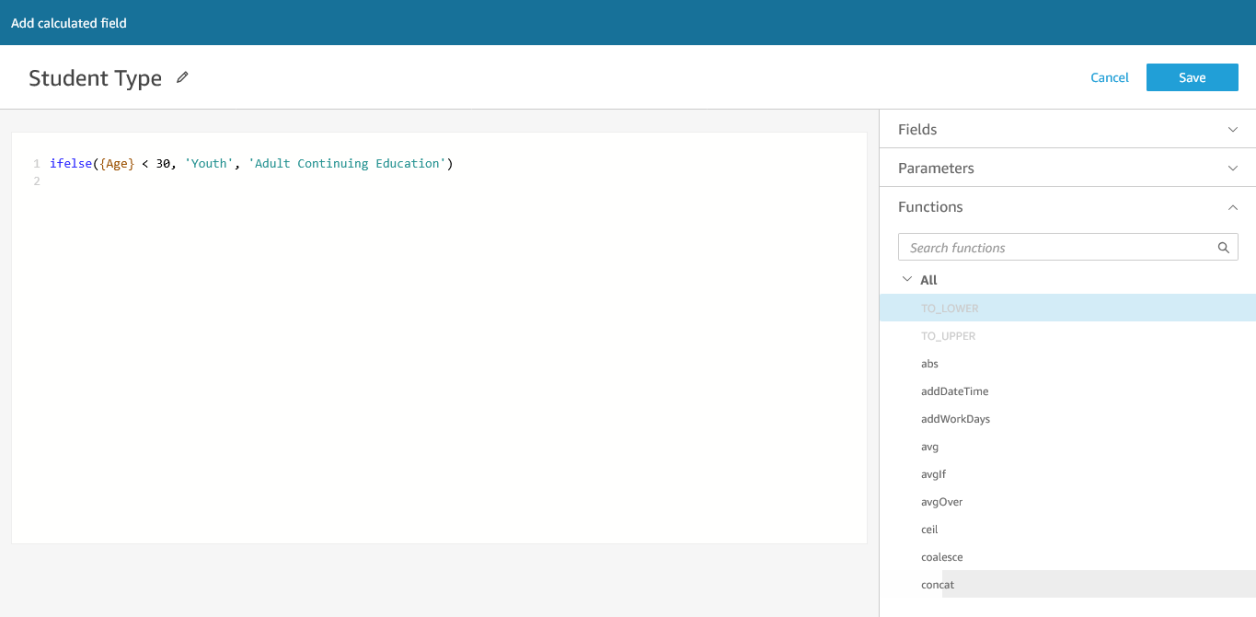
**2.6 Rename field HomeOfOrigin → NationalOrigin**

  
Caption: Field HomeOfOrigin renamed to NationalOrigin with description: "Country of Residence on admission application".

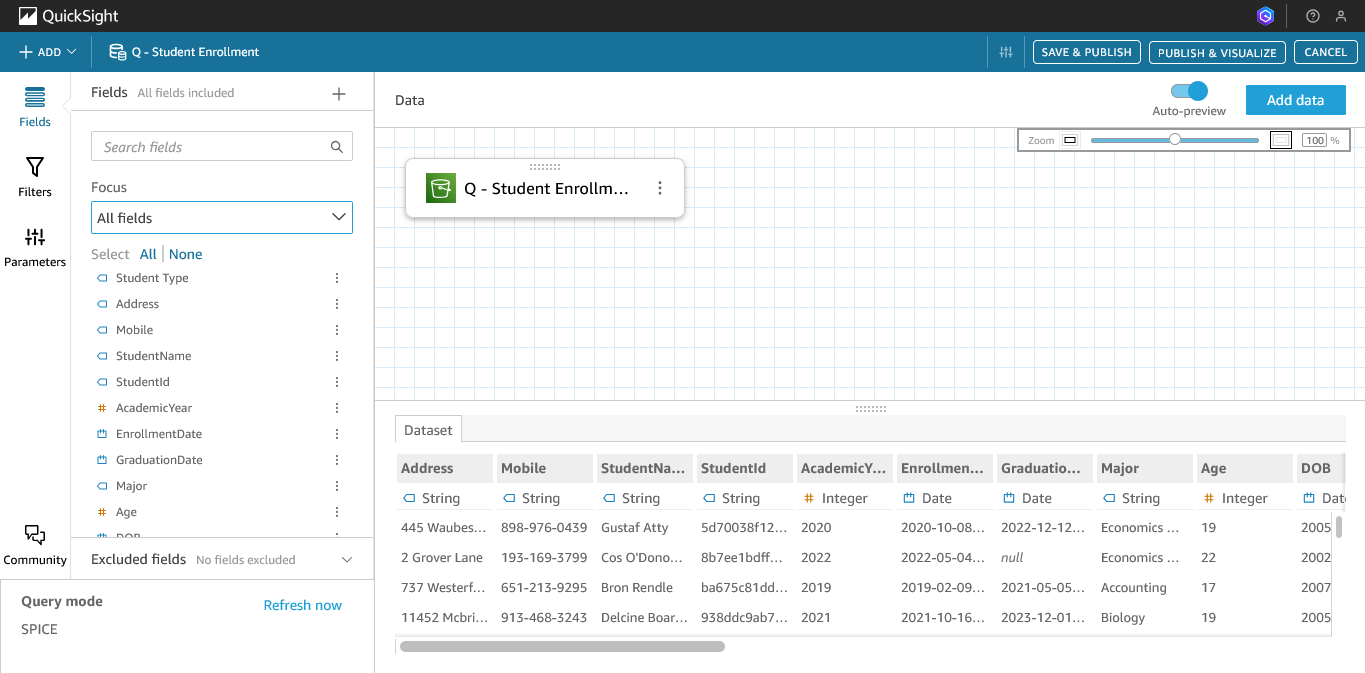
**2.7 Calculated field: Student Type**

**Formula:**

**ifelse({Age} < 30, "Youth", "Adult Continuing Education")**

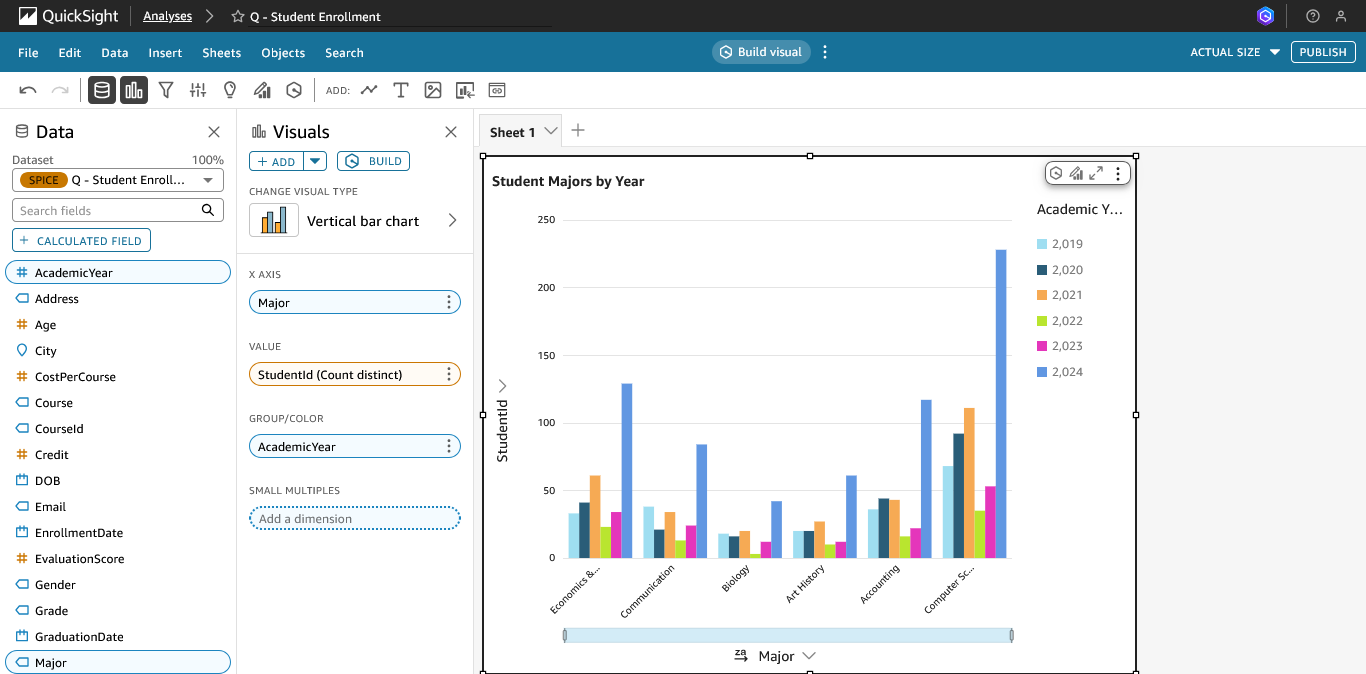
  
Caption: Calculated field Student Type defined using ifelse on Age.

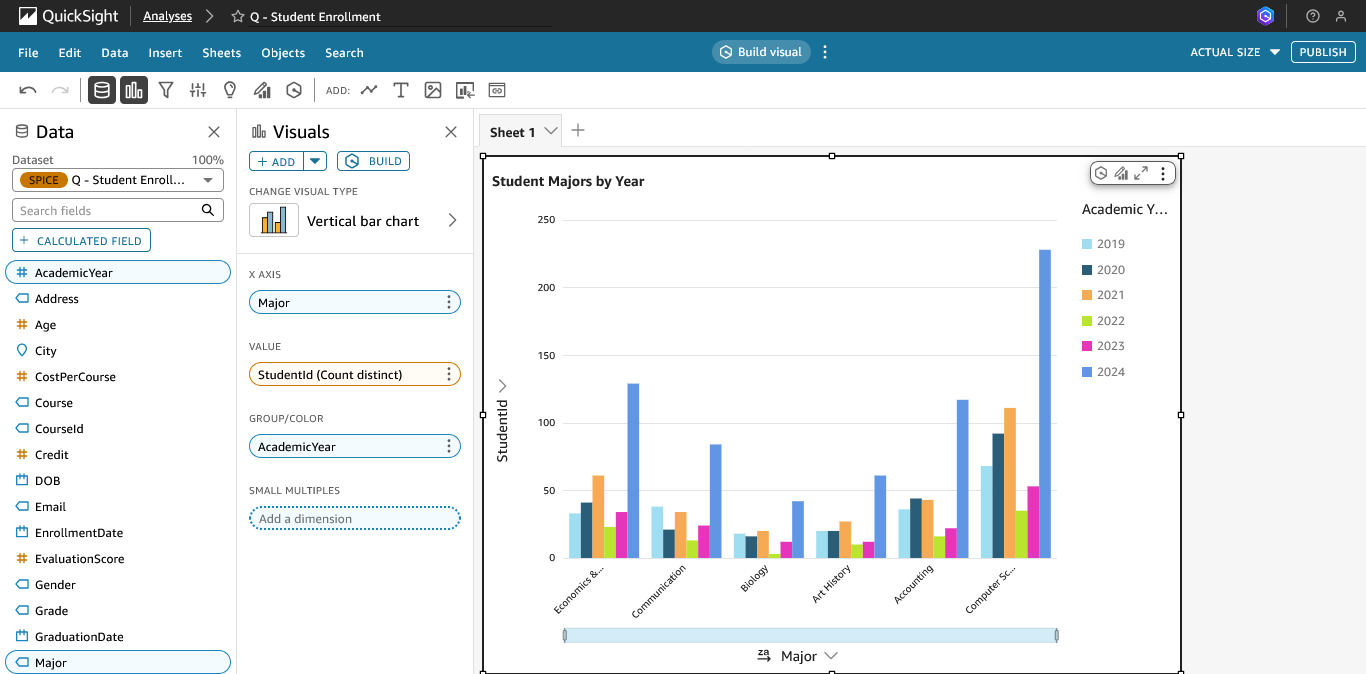
**2.8 Dataset published confirmation**

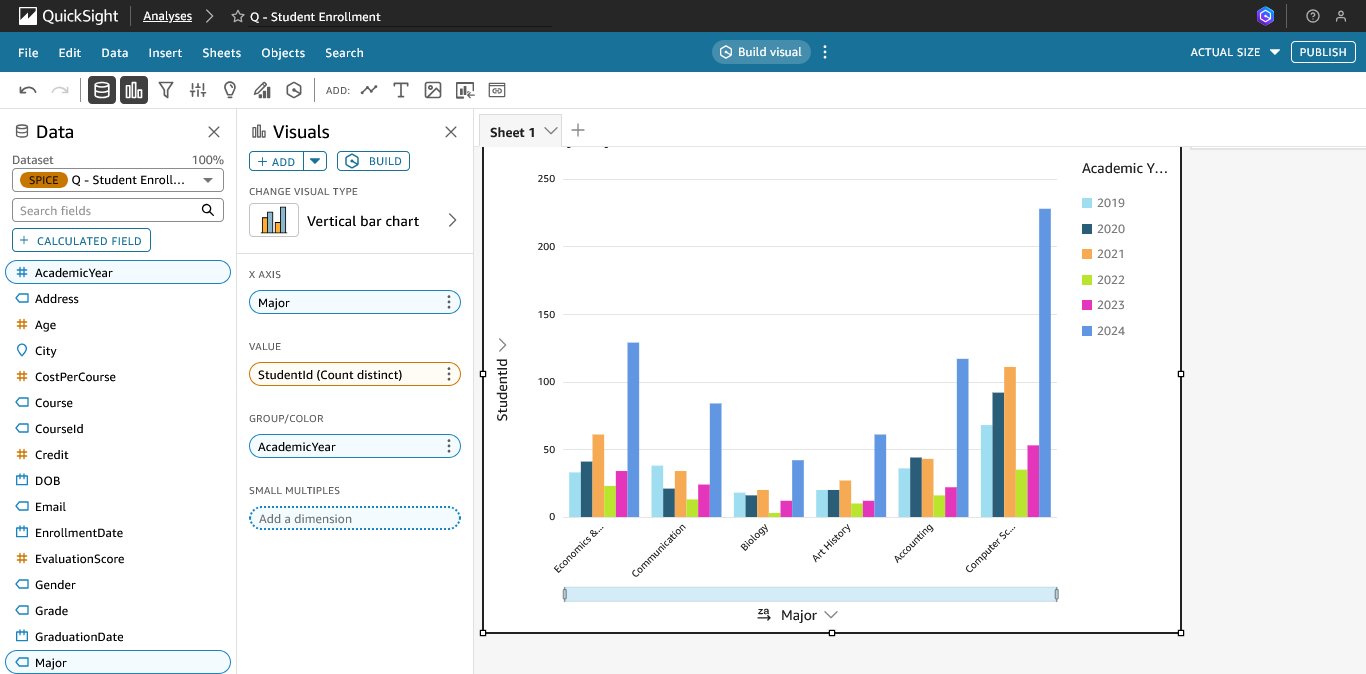
  
Caption: Q - Student Enrollment dataset published.

**3. Analysis — Visuals Created Using Q**

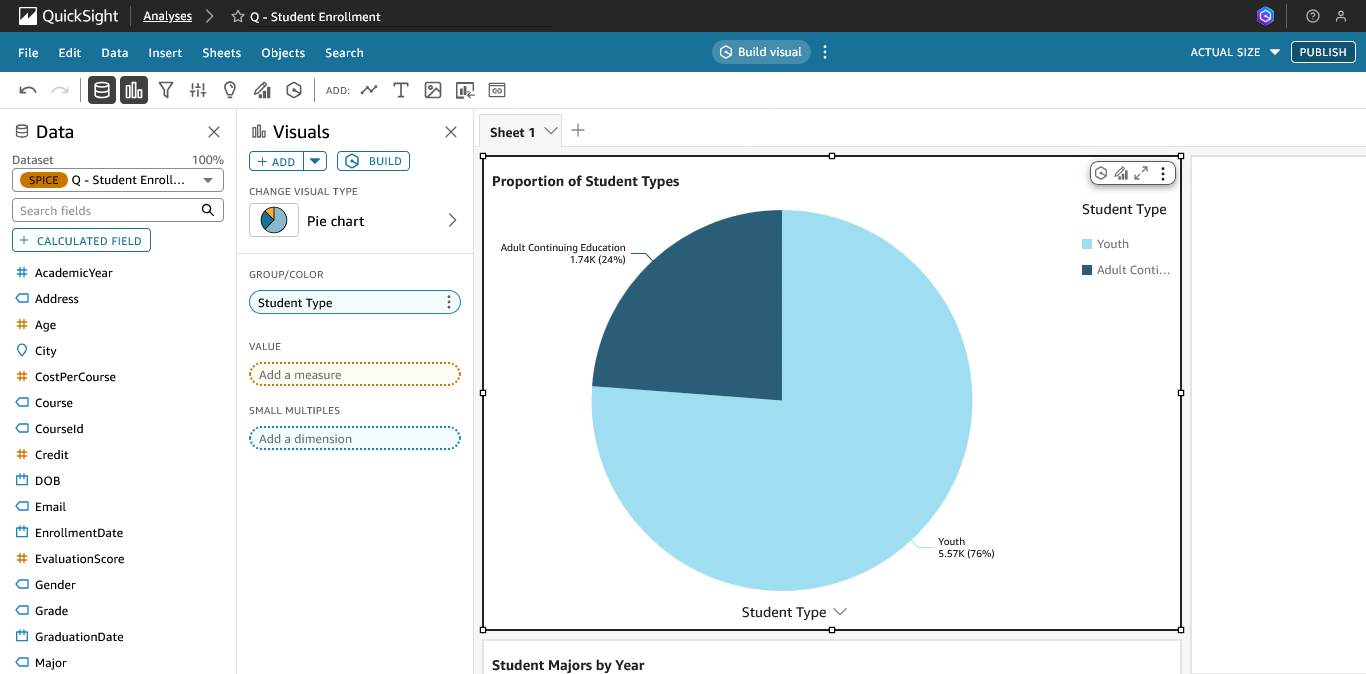
**3.1 Visual: Student Majors by Year (initial from Q)**

* **Prompt used:** “Show the number of students in each major, grouped by their academic year.”
* **Actions taken:** Renamed to *Student Majors by Year*, resized chart, removed comma separators from AcademicYear, reconfigured to vertical bar chart using Edit with Q.  
  Caption: Visual created by Q — initial version.

  
Caption: AcademicYear formatted to remove commas.

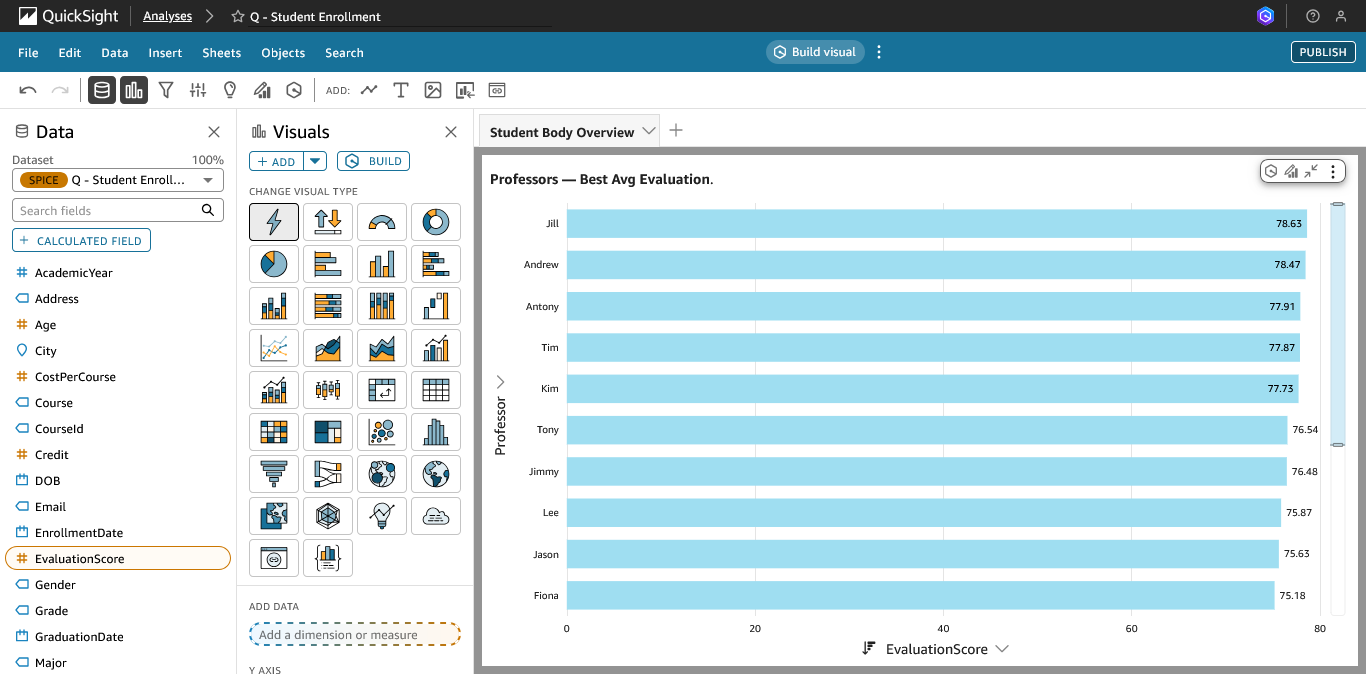
  
Caption: Visual reconfigured to vertical bar chart.

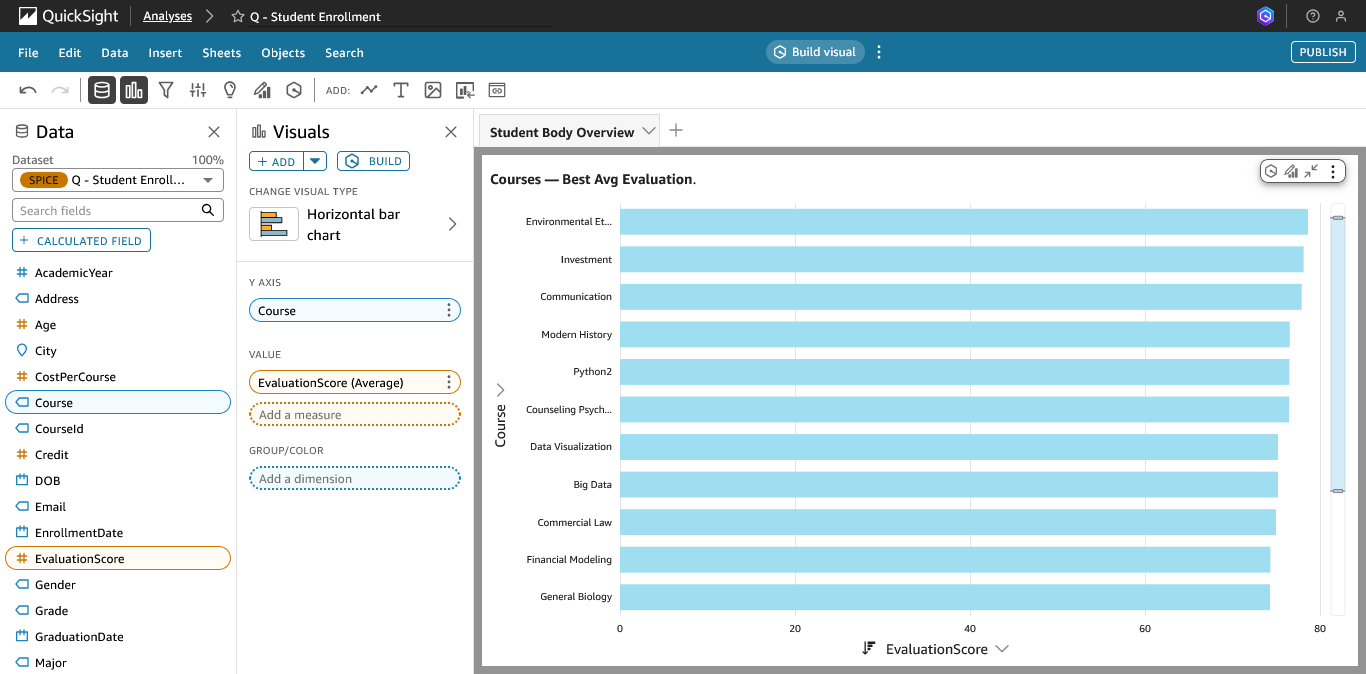
**3.2 Visual: Proportion of Student Types (pie)**

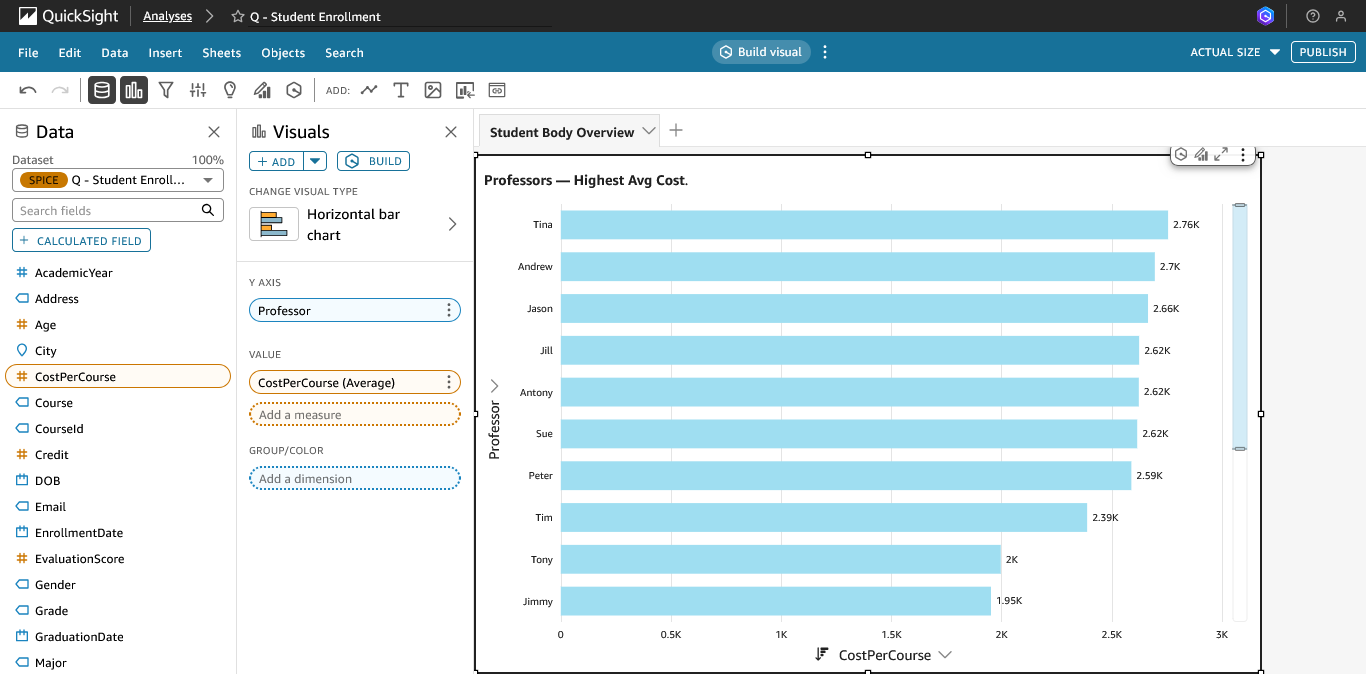
* **Prompt used:** “Pie chart of Student Types.”
* **Actions taken:** Renamed to *Proportion of Student Types*, resized legend and chart.  
  Caption: Proportion of Student Types (pie chart).

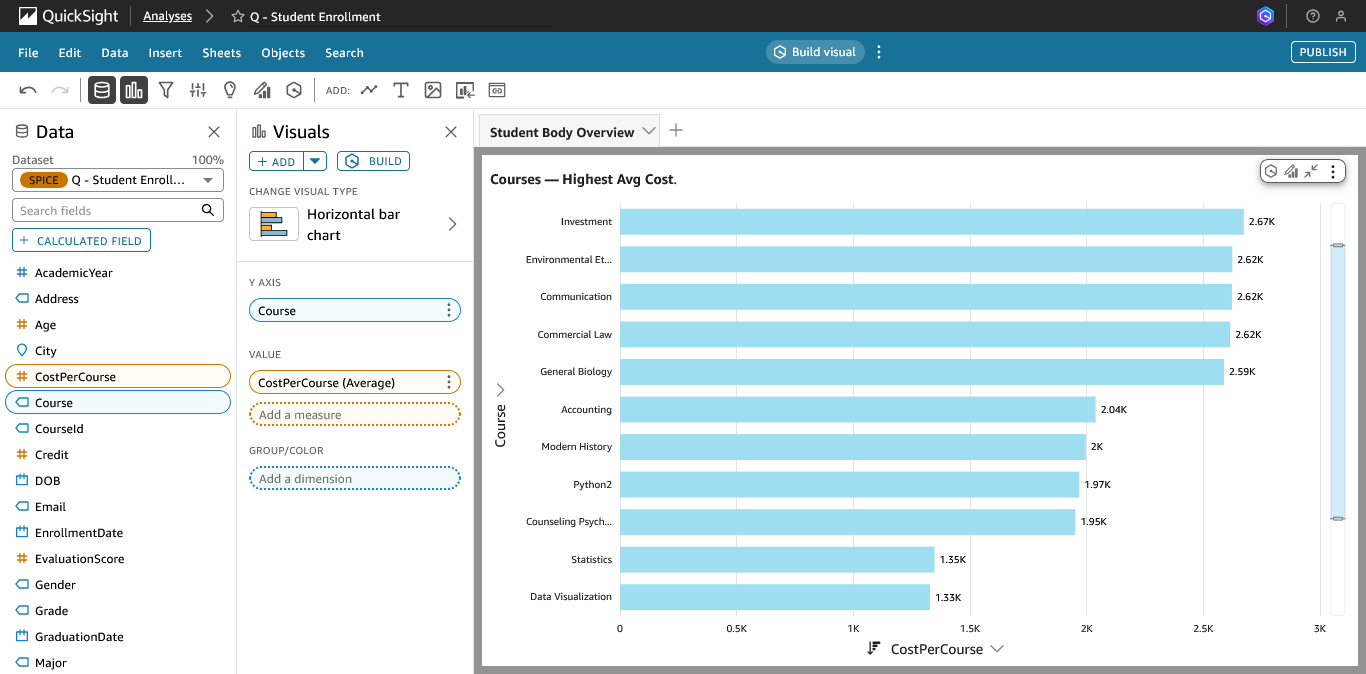
**3.3 (Additional visuals created during extension)**

* Professors with best average evaluations.
* Courses with best average evaluations.
* Professors with highest average course costs.
* Courses with highest average course costs.  
  [Insert four screenshots here for the four visuals]  
  (example image URLs below relate to these visuals)



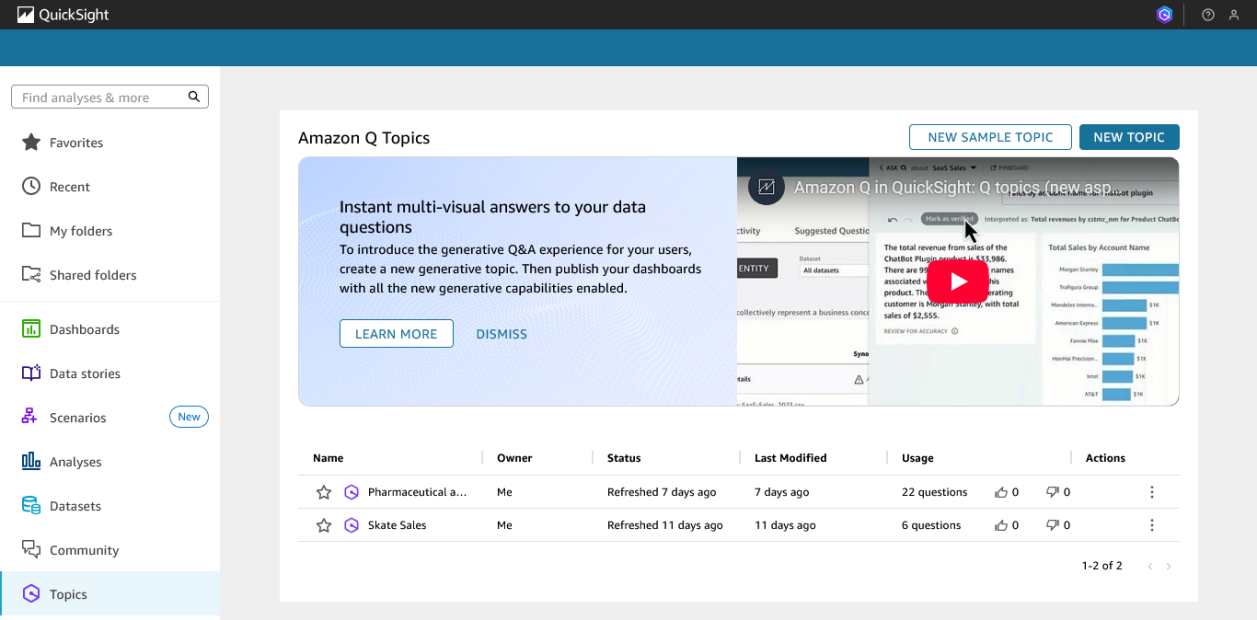


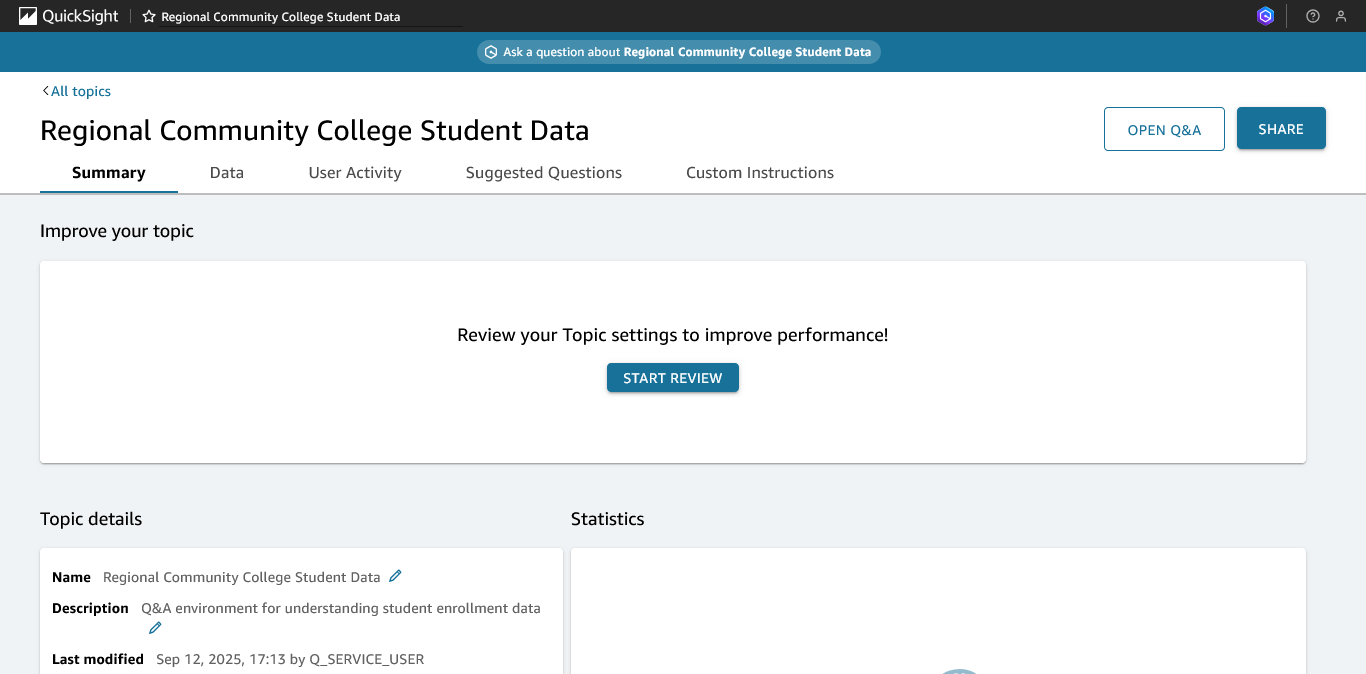




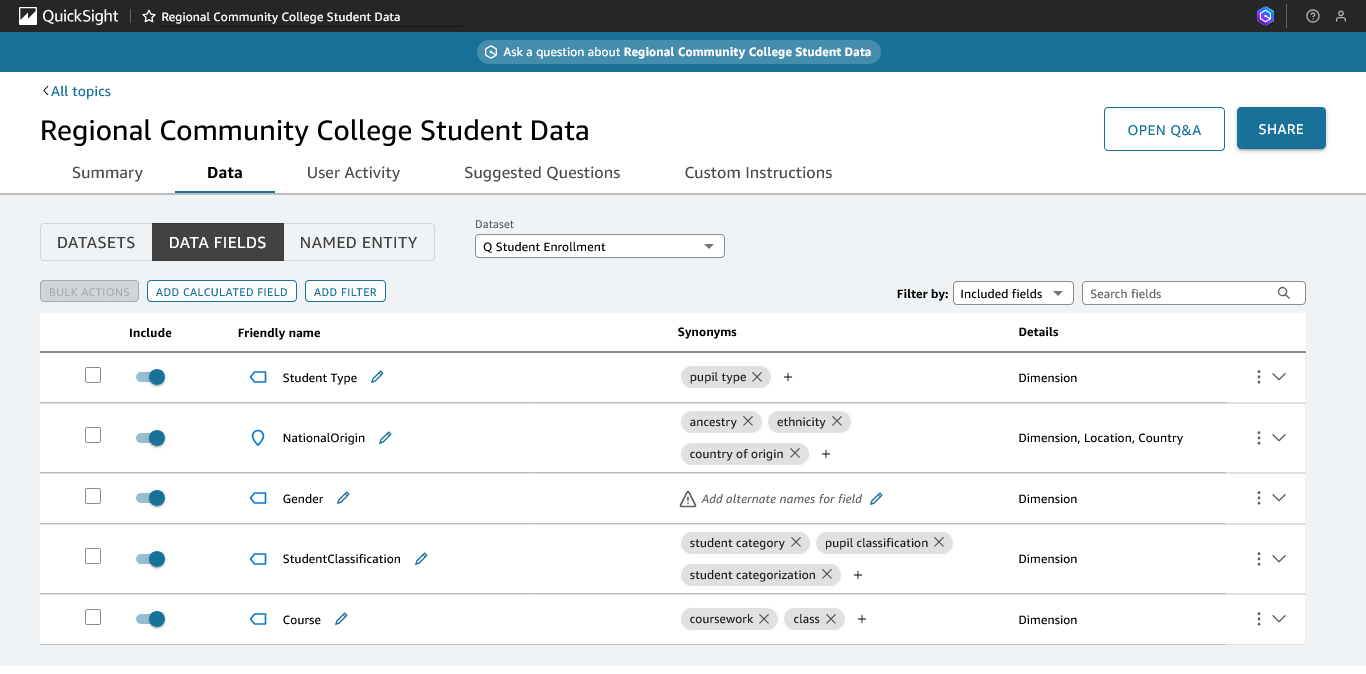
**4. Topic & Named Entities**

**4.1 Delete sample topic and create new Topic**

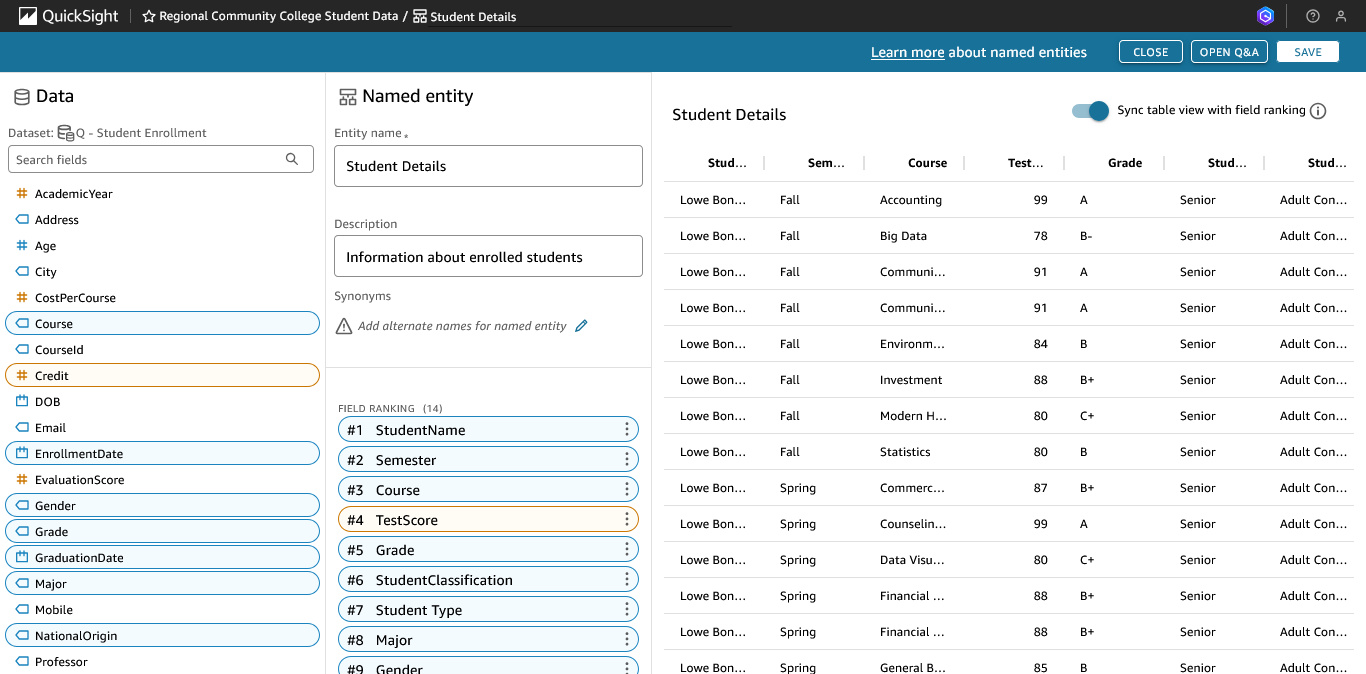
* **Topic Name:** Regional Community College Student Data
* **Description:** Q&A environment for understanding student enrollment data.  
  Caption: Deleted sample topic.

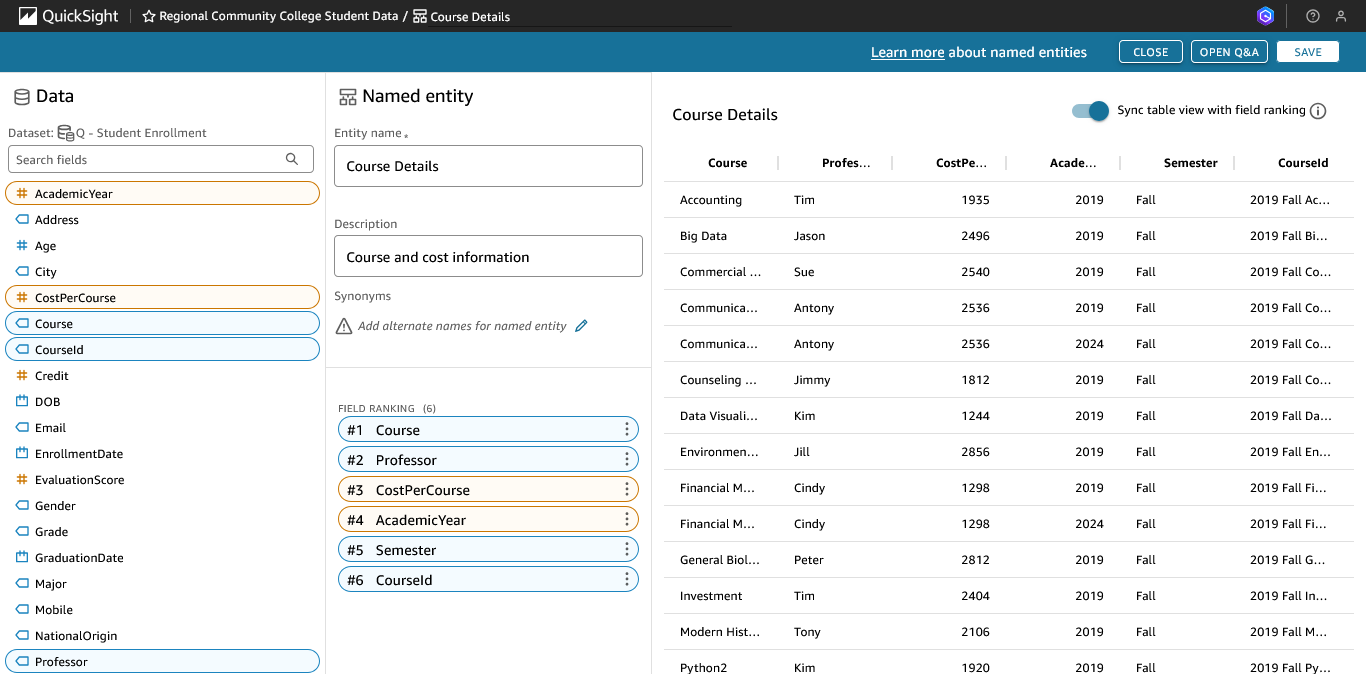
  
Caption: Creating topic progress.

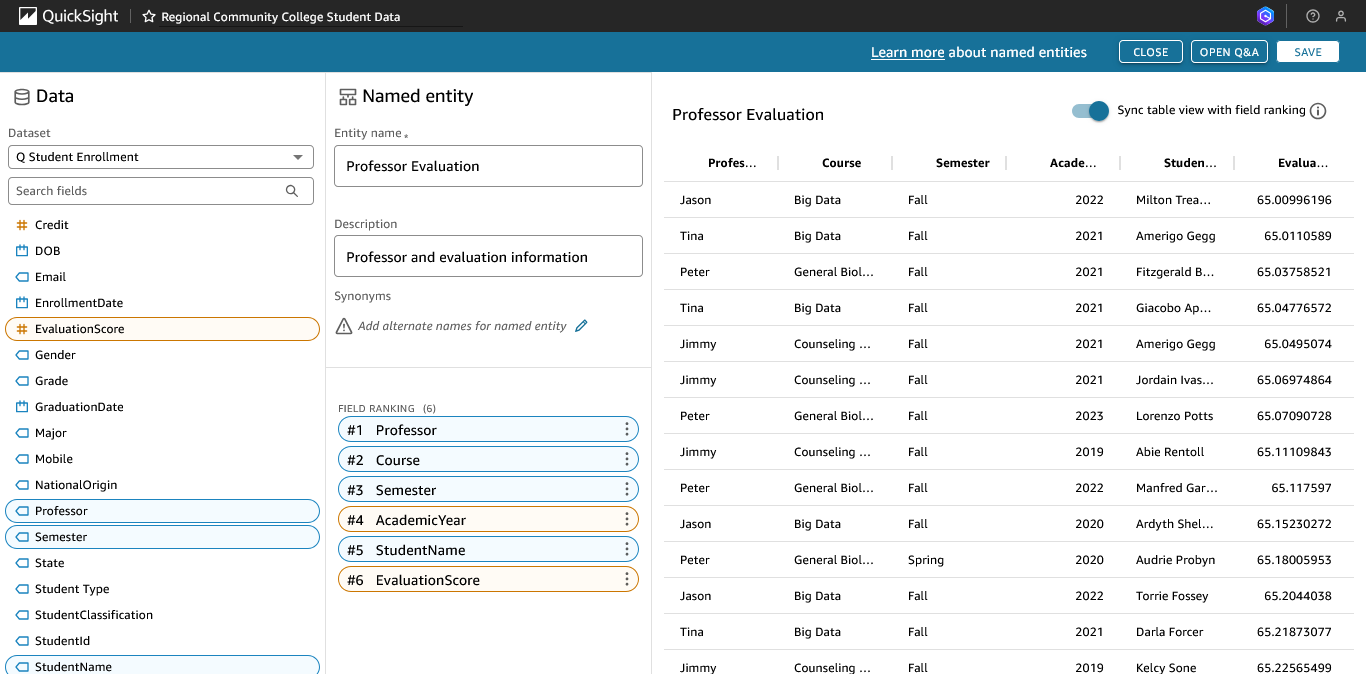
**4.2 Topic fields included**

The following dataset fields were added to the Topic:  
Student Type, NationalOrigin, Gender, StudentClassification, Course, Grade, TestScore, Semester, CourseId, Professor, Credit, CostPerCourse, EvaluationScore, StudentName, StudentId, AcademicYear, EnrollmentDate, GraduationDate, Major, Age.  
  
Caption: Topic field list includes required fields.

**4.3 Named Entities & Field Ranking**

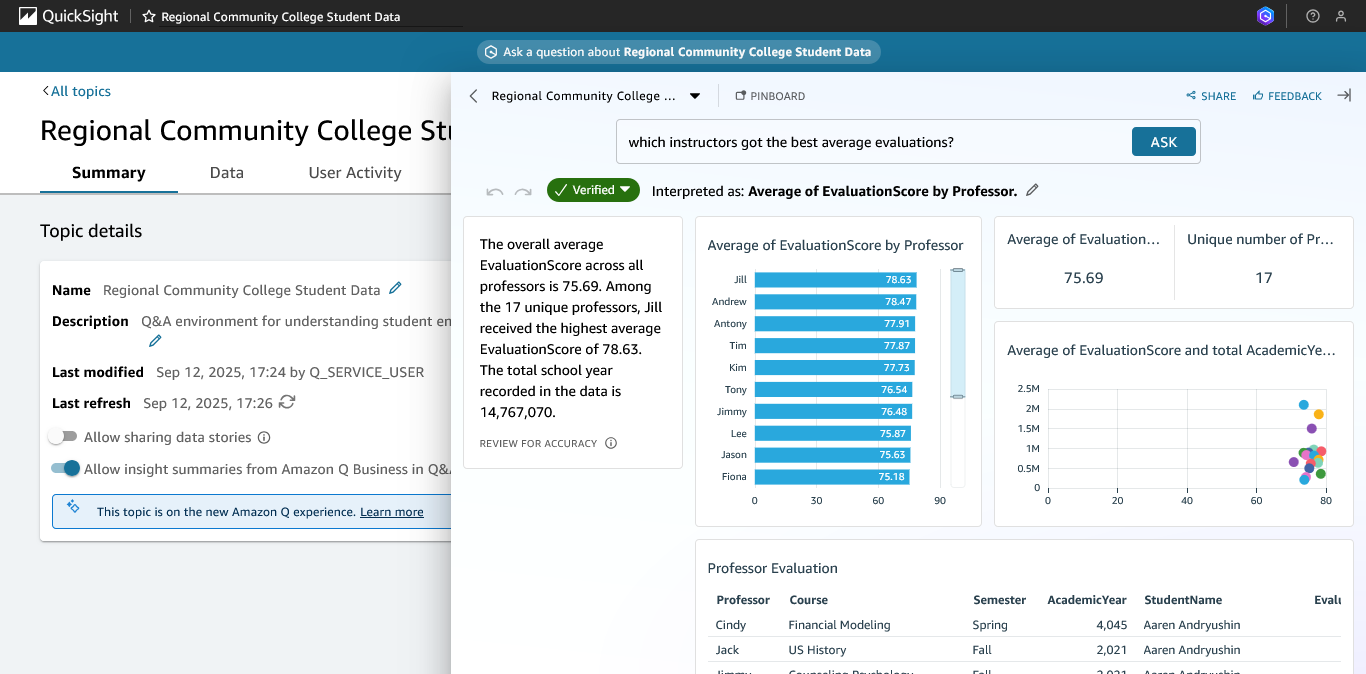
**Student Details** — Field ranking: Student Name, Semester, Course, Test Score, Grade, Student Classification, Student Type, Major, Gender, NationalOrigin, Credit, Enrollment Date, Graduation Date, Student Id.  


**Course Details** — Field ranking: Course, Professor, Cost per Course, Academic Year, Semester, Course Id.  


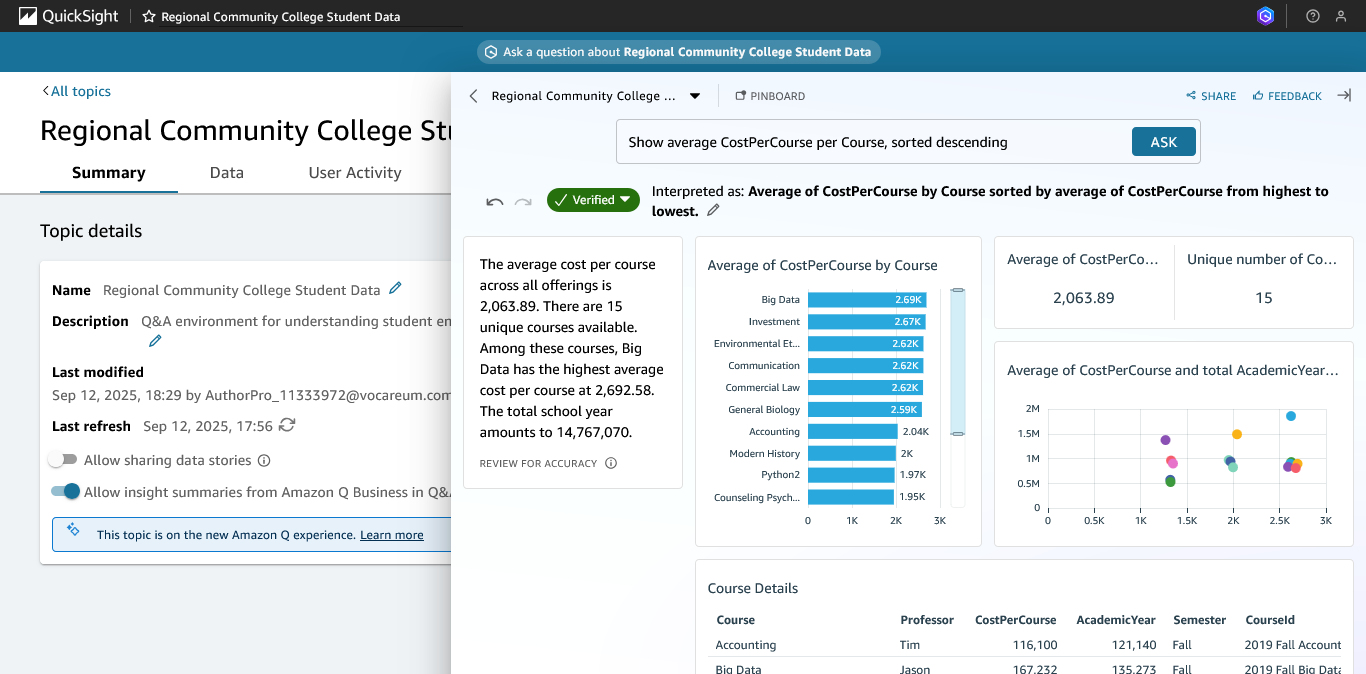
**Professor Evaluation** — Field ranking: Professor, Course, Semester, Academic Year, Student Name, Evaluation Score.  


**5. Verified Answers (Q)**

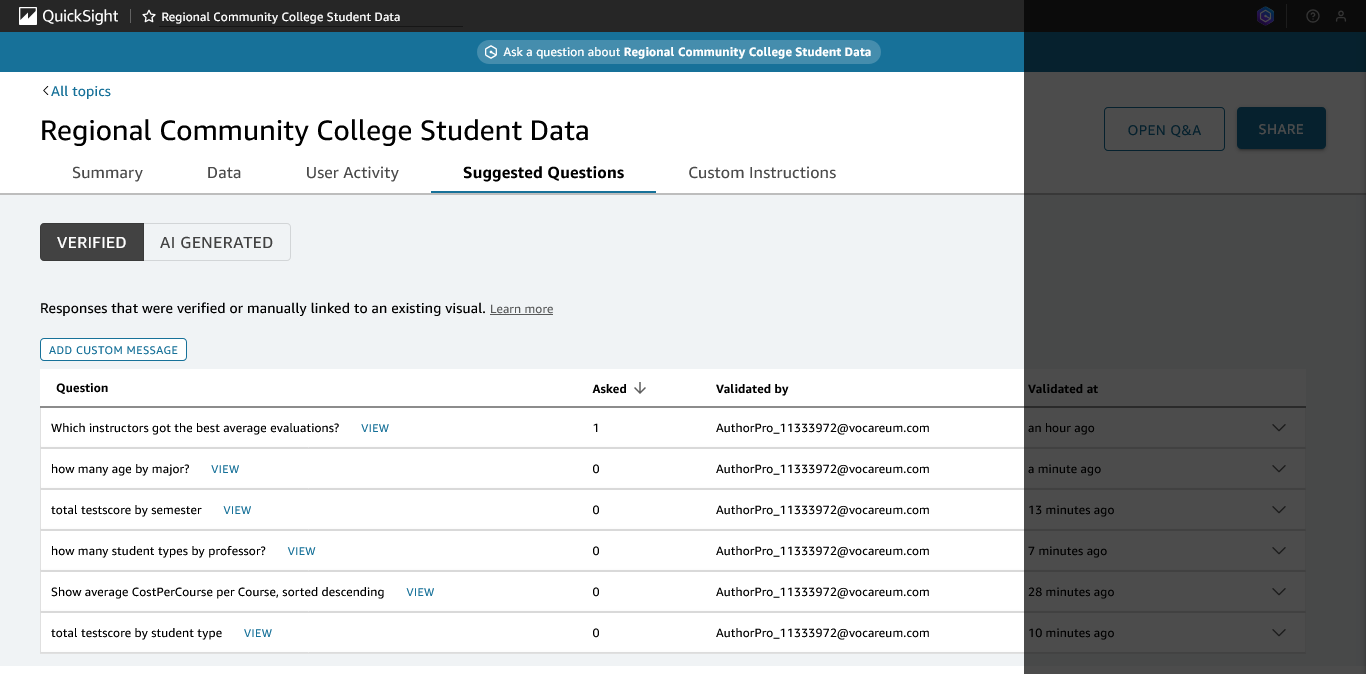
**5.1 Ask: Which instructors got the best average evaluations? — Mark Verified**

  
Caption: Verified Q answer: Best instructors.

**5.2 Ask: Which courses are the most expensive? — Correct interpretation and mark Verified**

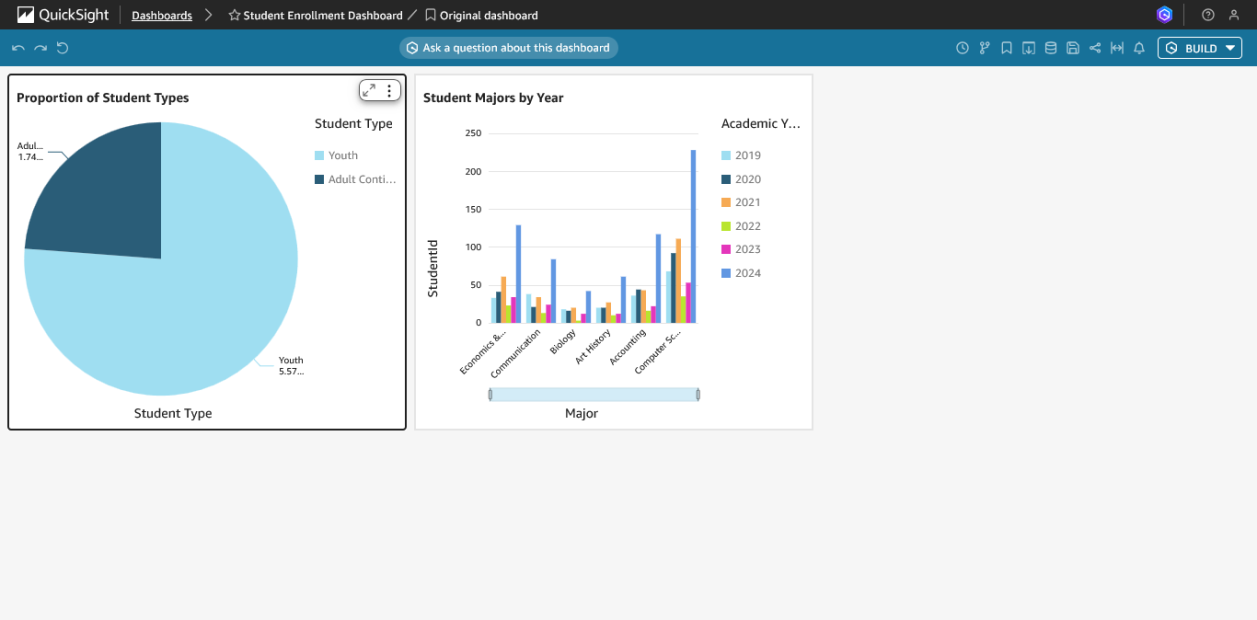
  
Caption: Verified Q answer: Most expensive courses (corrected if necessary).

**5.3 Verified Questions List (confirm they appear in Verified list)**

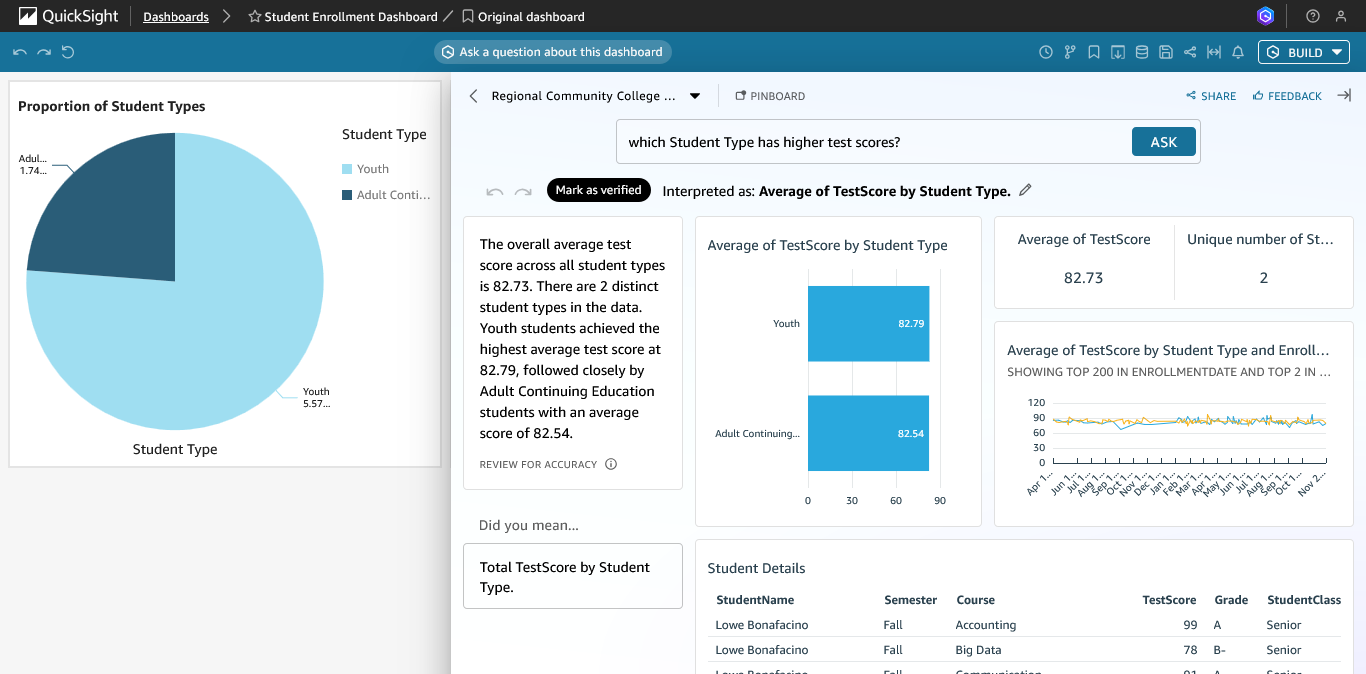
  
Caption: List of Verified questions in the Topic.

**6. Dashboard — Publish Analysis as Dashboard**

**6.1 Publish as Student Enrollment Dashboard (Q allowed)**

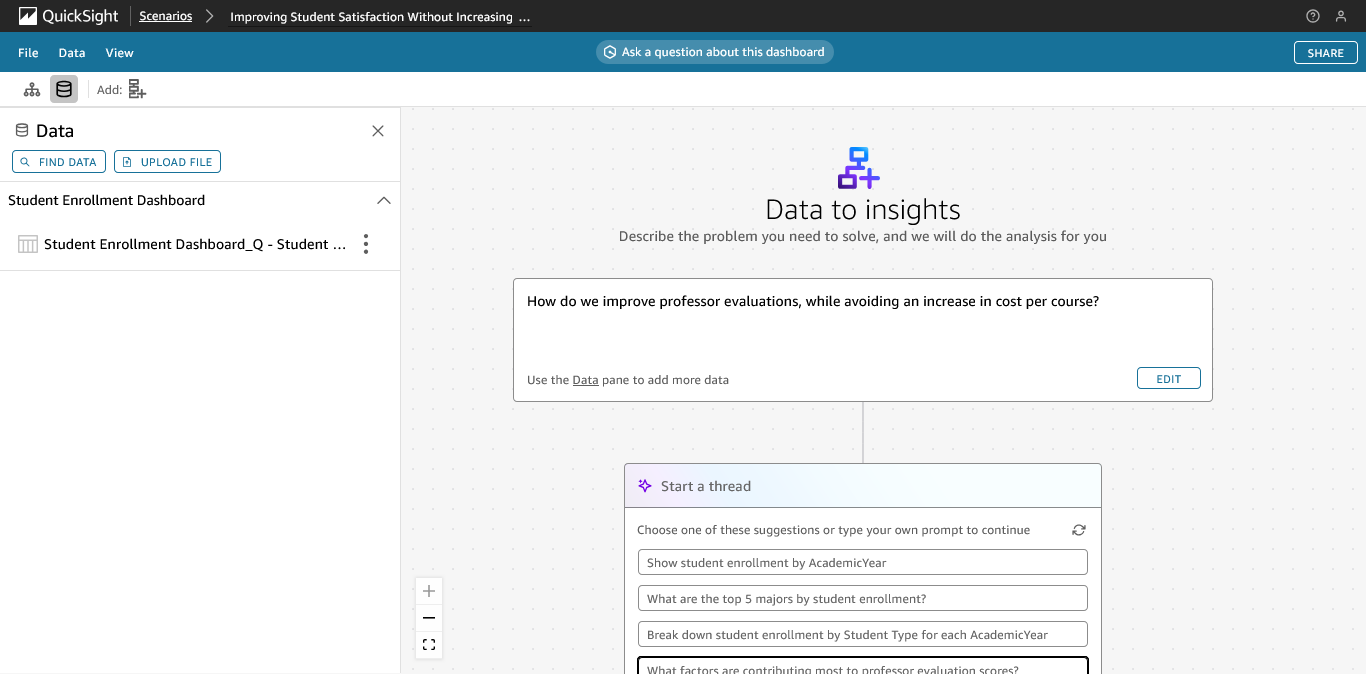
 Caption: Student Enrollment Dashboard published with Q enabled.

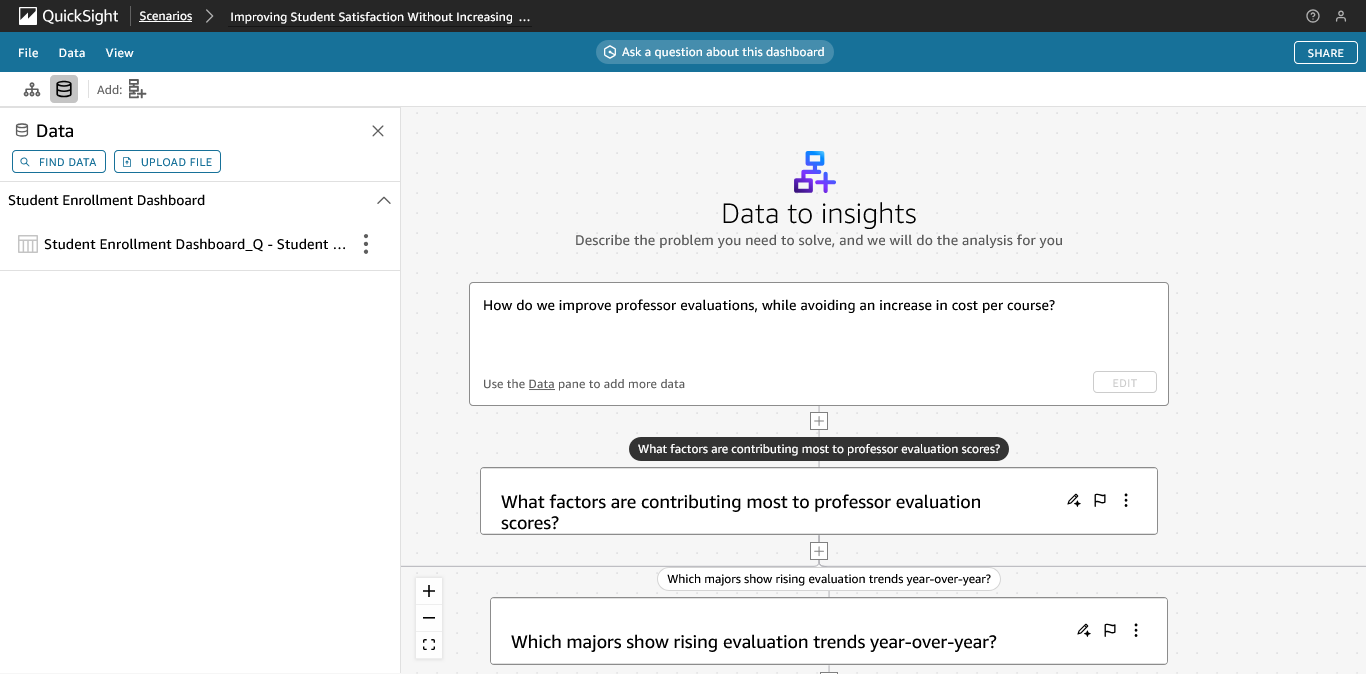
**6.2 Test Q&A in dashboard: Which Student Type has higher test scores?**

  
Caption: Dashboard Q&A test result.

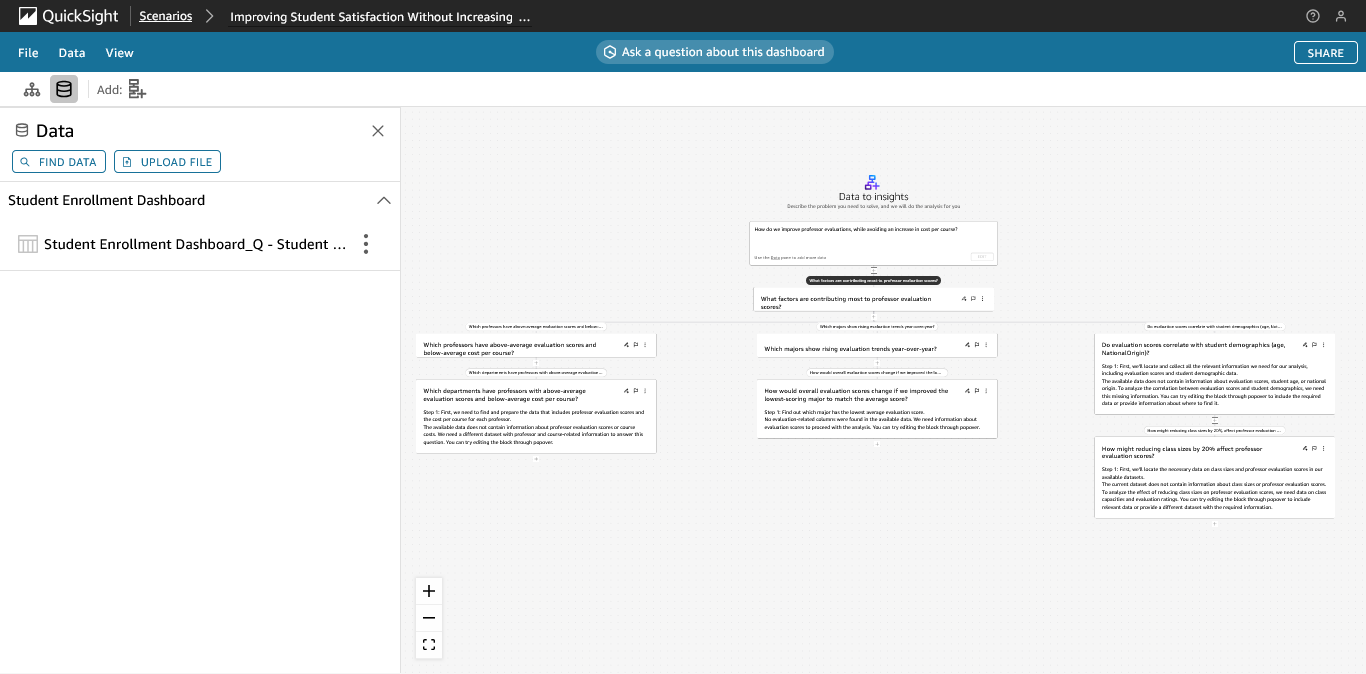
**7. Scenarios**

**7.1 Create Scenario: Improving Student Satisfaction Without Increasing Costs**

* **Data selected:** Student Majors by Year & Proportion of Student Types (initial two visuals)
* **Starter question:** “How do we improve professor evaluations, while avoiding an increase in cost per course?”  
    
  Caption: Scenario creation — select visuals.

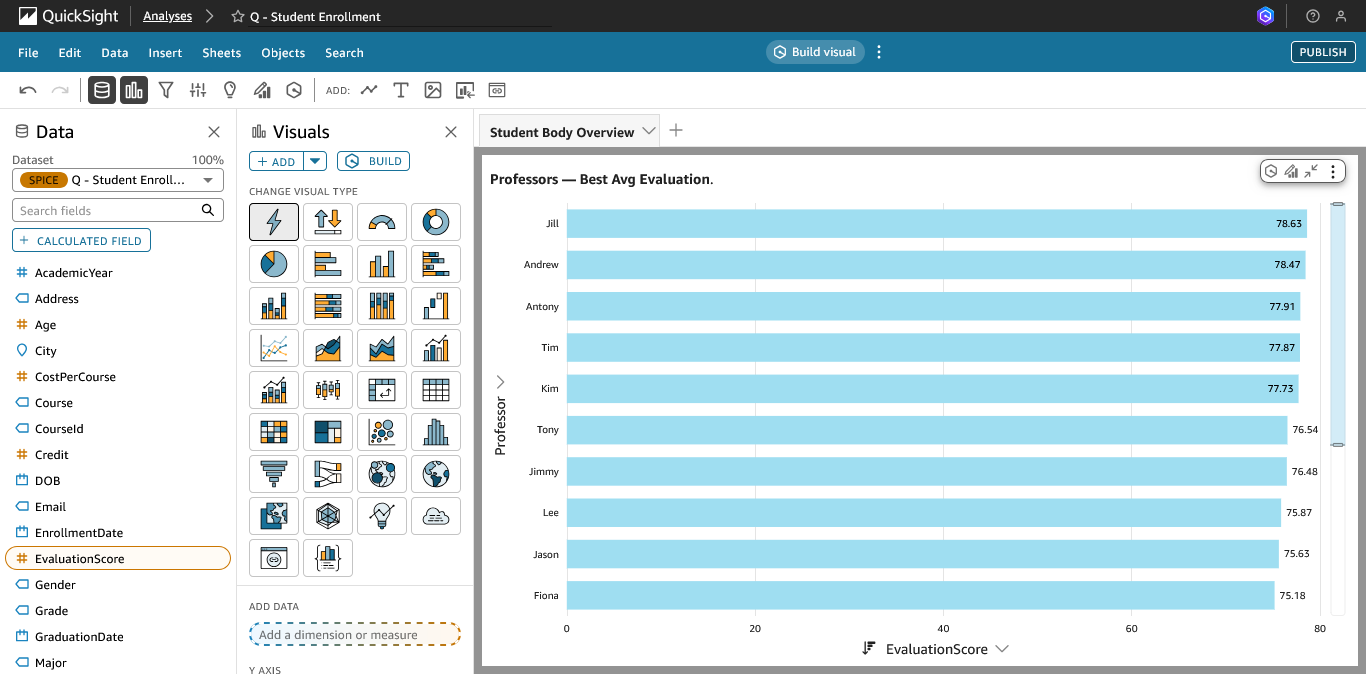
  
Caption: Starter question entered.

**7.2 Scenario thread — follow-up prompts and iterative exploration**

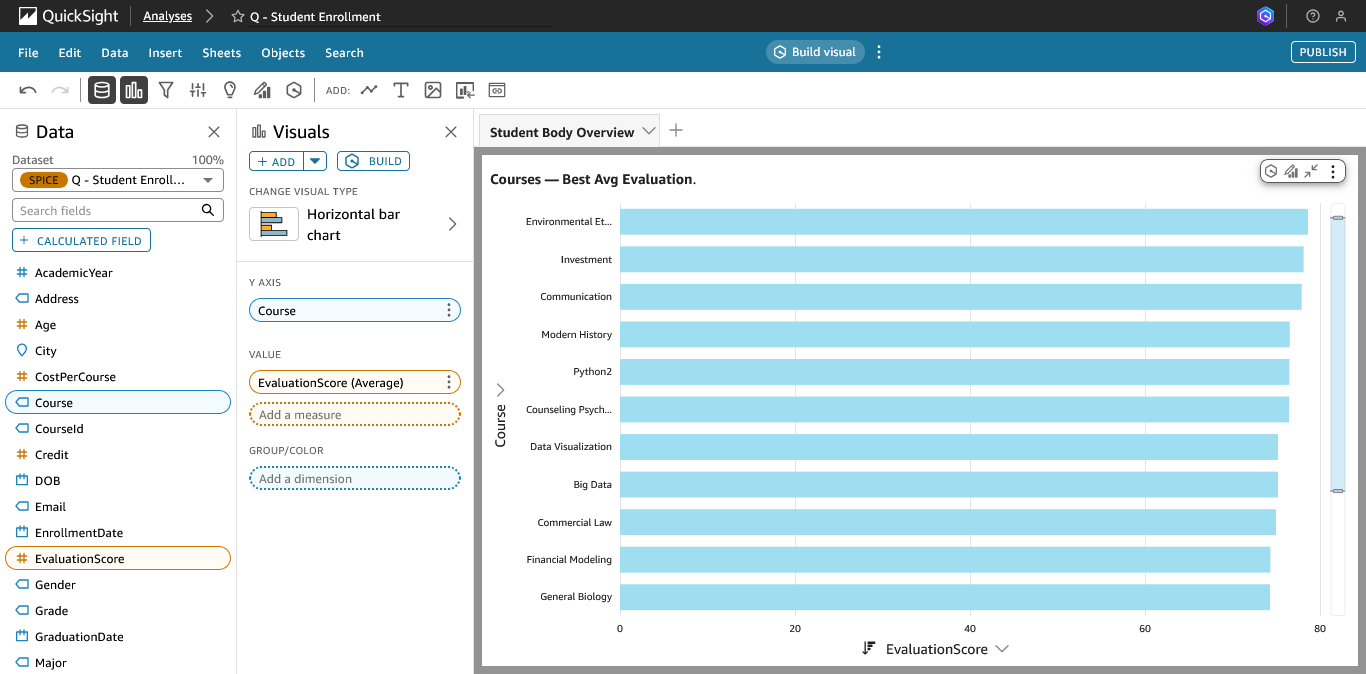
 Caption: Scenario thread showing follow-ups.

**8. Extend Analysis (four new visuals) & Republish Dashboard**

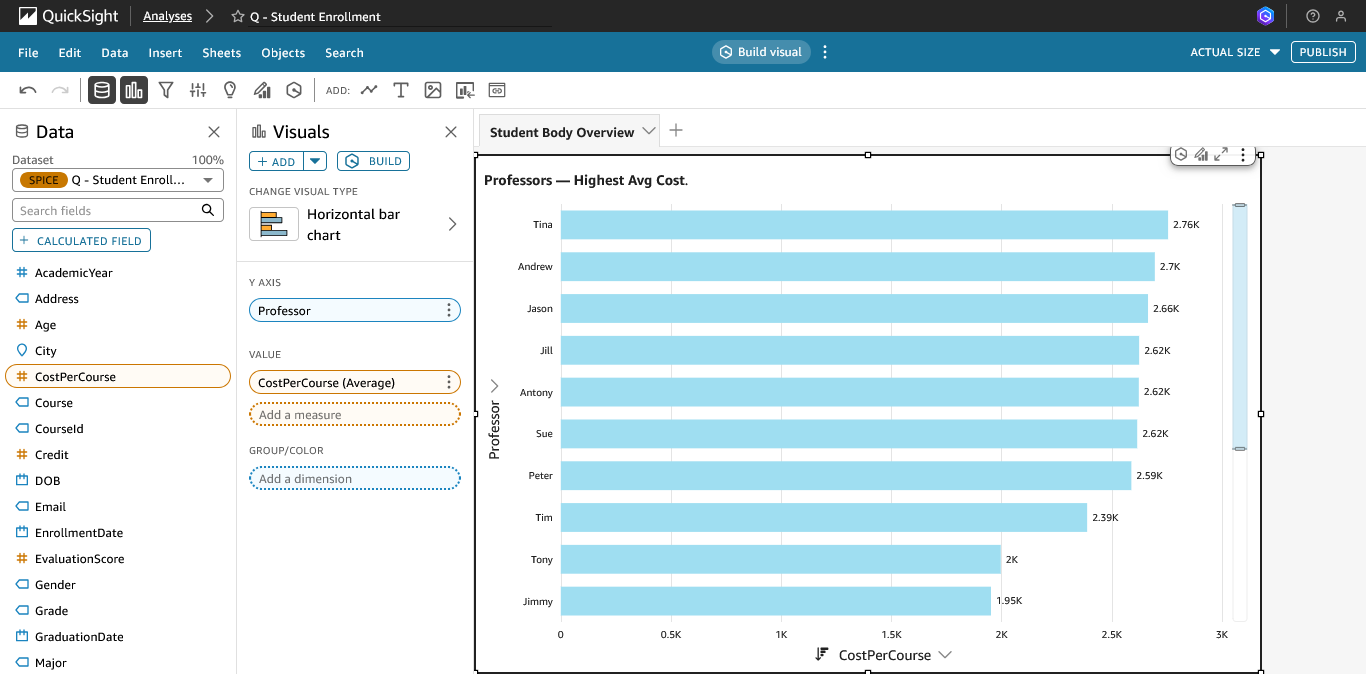
**8.1 Professors with best average evaluations**



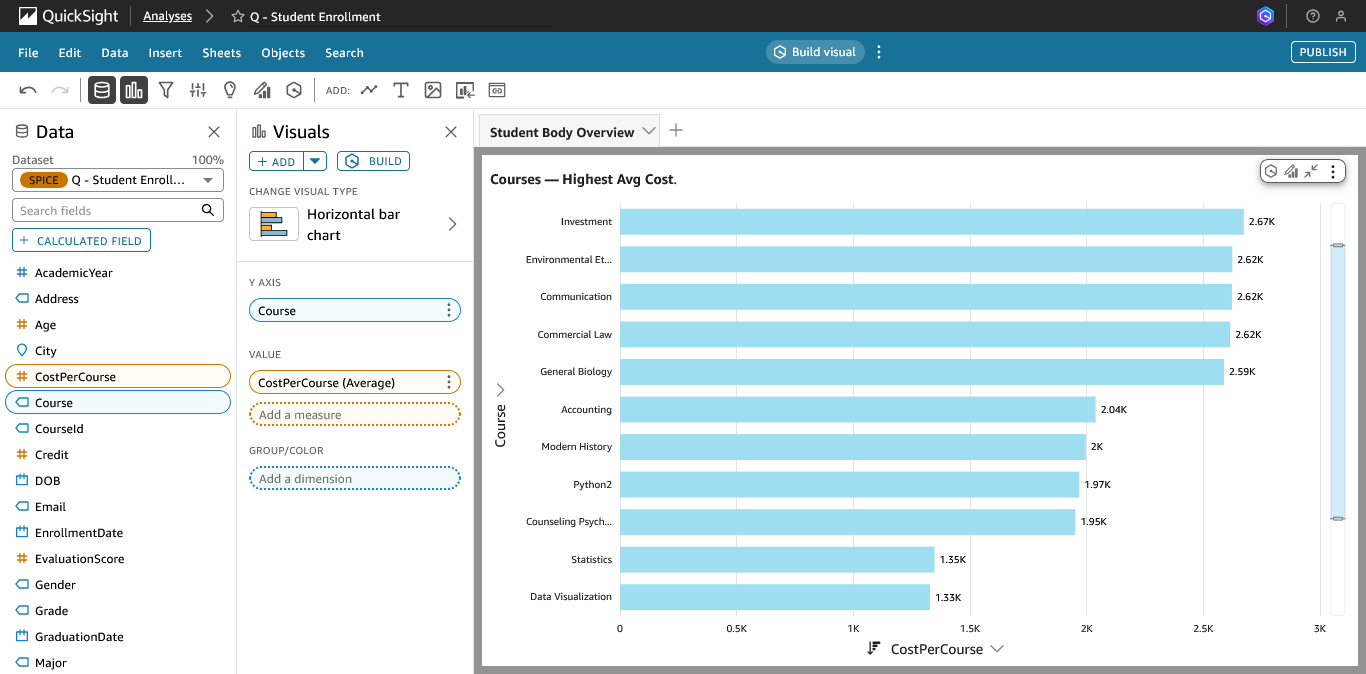
**8.2 Courses with best average evaluations**

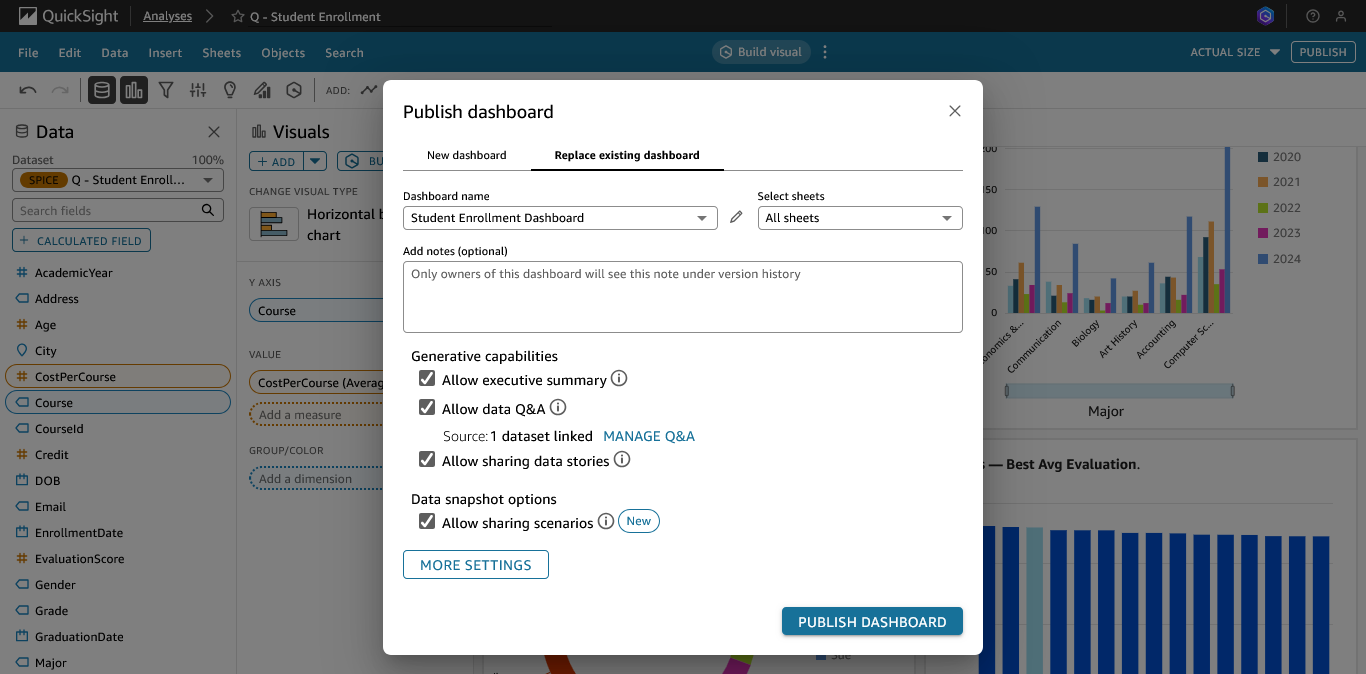


**8.3 Professors with highest average course costs**

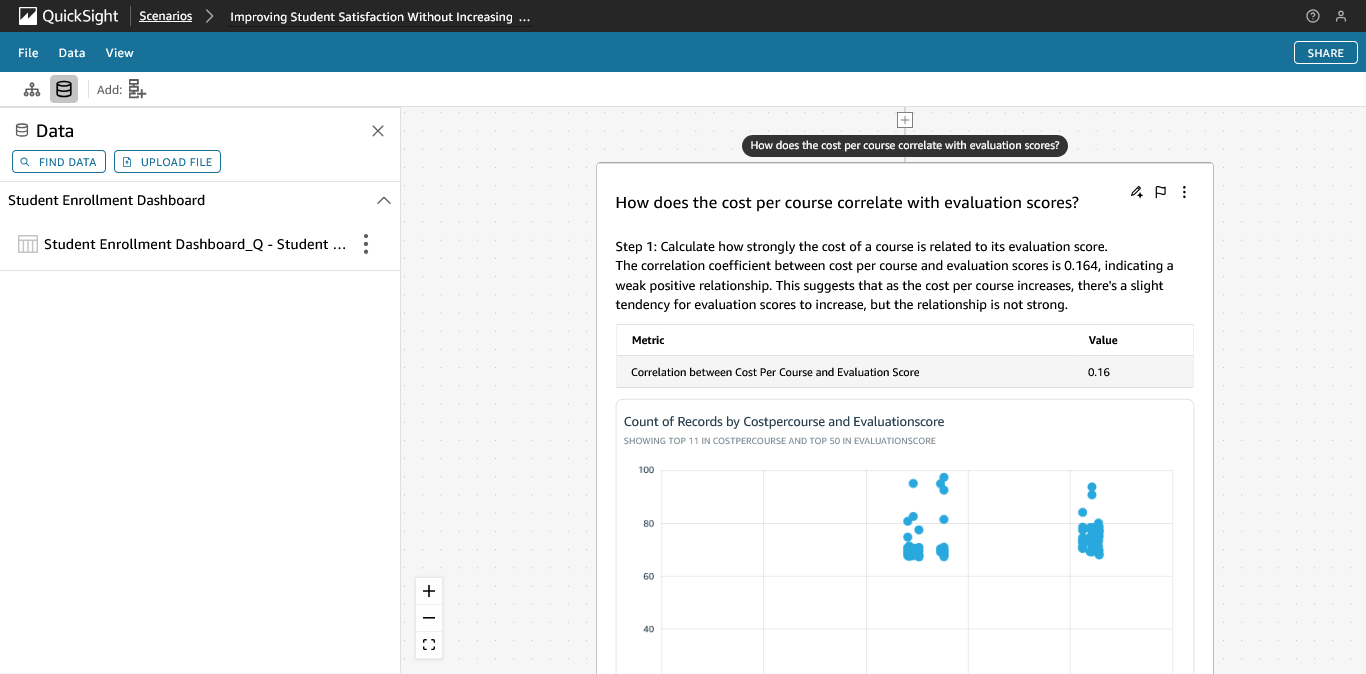


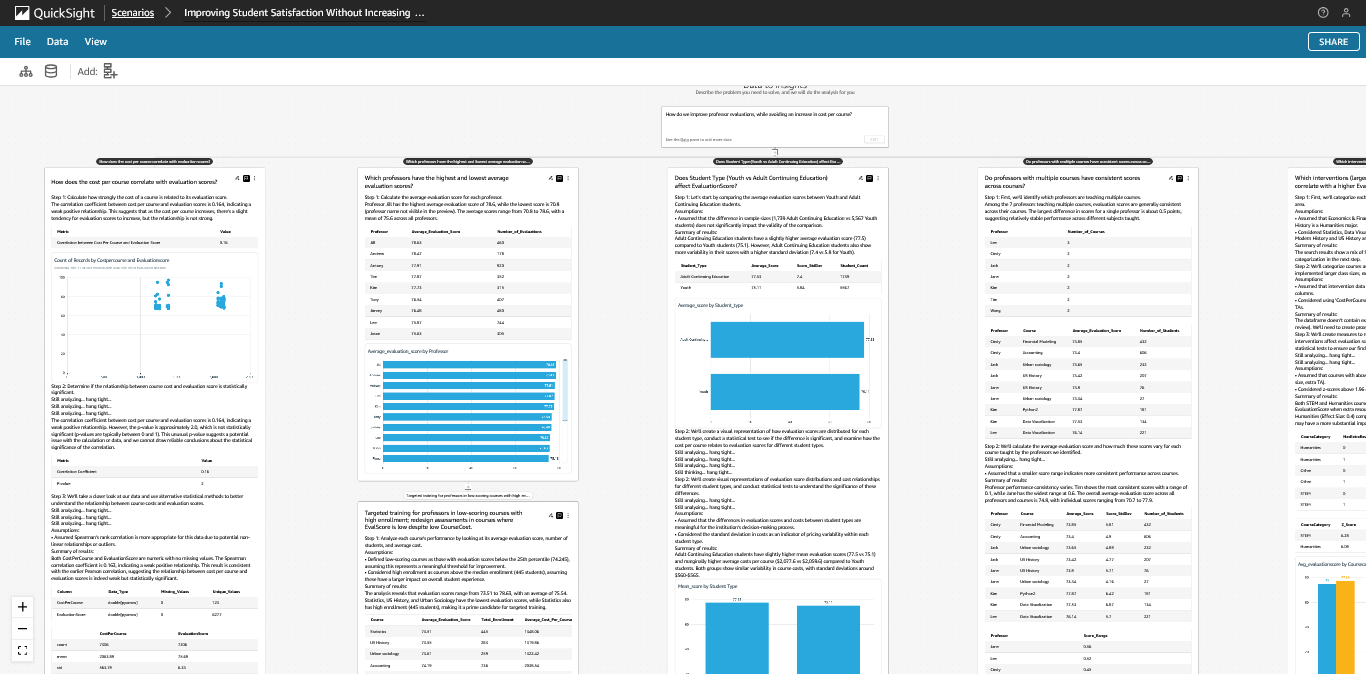
**8.4 Courses with highest average course costs**

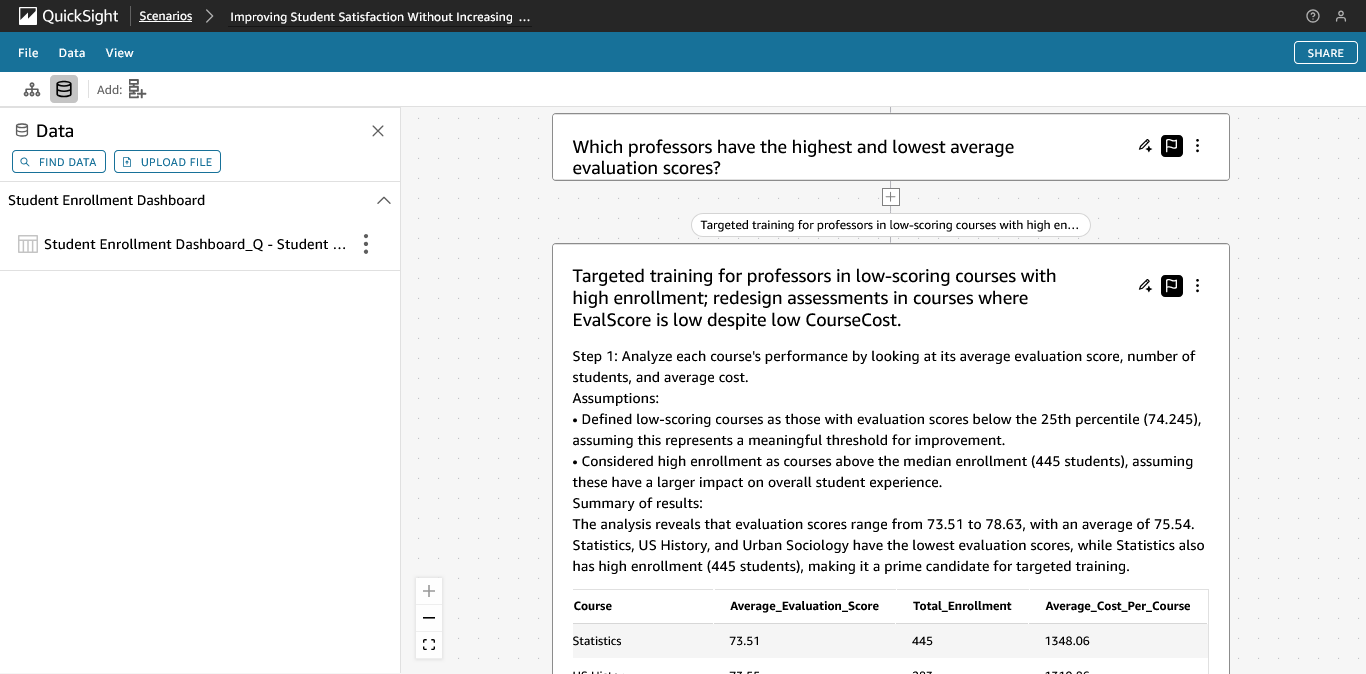


**Republish Dashboard (replace existing):**  
  
Caption: Dashboard republished replacing the original.

**9. Recreate Scenario with all visuals & finalize thread**







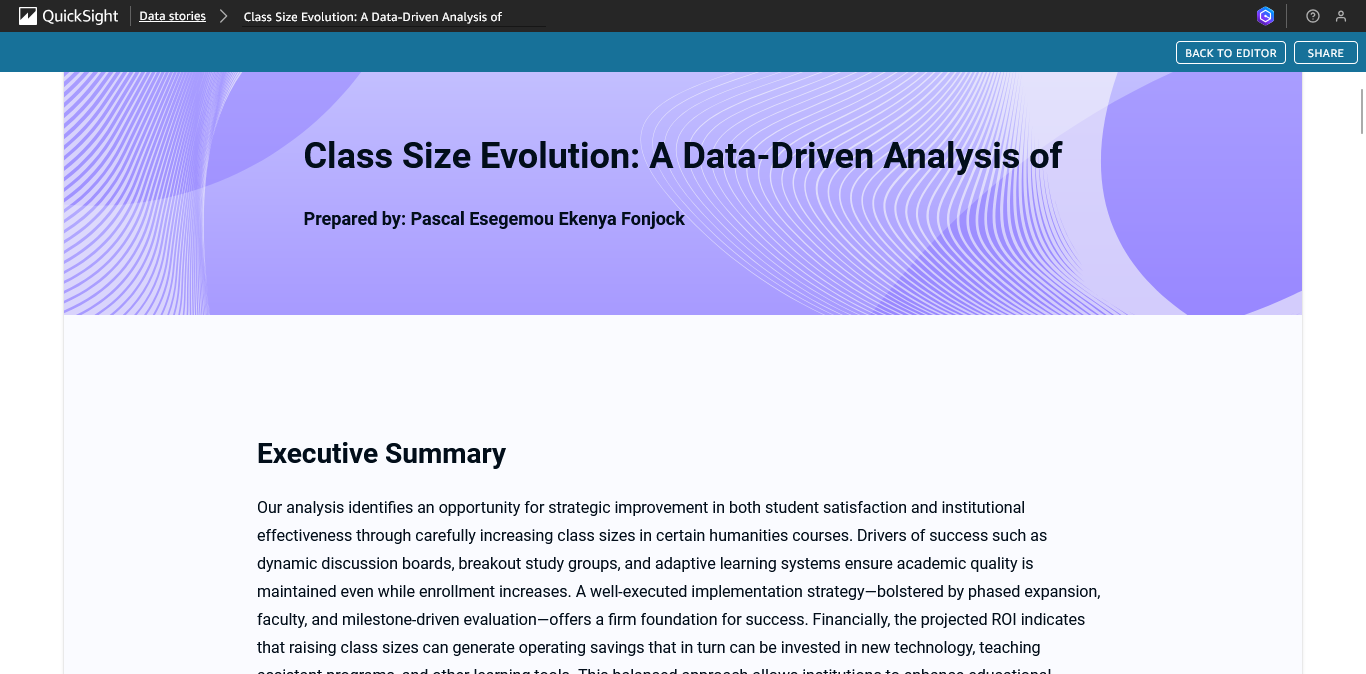
Caption: Scenario thread culminating in recommendation.

**10. Data Story — Create & Polish**

**10.1 Use Q to auto-generate an initial Data Story; improve with custom text blocks and visuals**

**Include visuals in story:**

* Student Majors by Year
* Proportion of Student Types
* Average EvaluationScore by Course
* Average CostPerCourse by Course



**Data Story text:**

Our analysis identifies an opportunity for strategic improvement in both student satisfaction and institutional effectiveness through carefully increasing class sizes in certain humanities courses. Drivers of success such as dynamic discussion boards, breakout study groups, and adaptive learning systems ensure academic quality is maintained even while enrollment increases. A well-executed implementation strategy—bolstered by phased expansion, faculty, and milestone-driven evaluation—offers a firm foundation for success. Financially, the projected ROI indicates that raising class sizes can generate operating savings that in turn can be invested in new technology, teaching assistant programs, and other learning tools. This balanced approach allows institutions to enhance educational outcomes while achieving sustainable cost management. **Recommendations (from story):**

1. Pilot instructor development program for low-cost/low-eval courses.
2. Document and scale teaching practices from high-eval/low-cost professors.
3. Use QuickSight weekly refresh to monitor impact.

**11. Listings of All Created Resources (for submission)**

* **Datasets:** Q - Student Enrollment (published)
* **Analyses:** Student Enrollment Analysis
* **Dashboards:** Student Enrollment Dashboard (initial & replaced)
* **Topics:** Regional Community College Student Data
* **Scenarios:** Improving Student Satisfaction Without Increasing Costs (initial & recreated)
* **Data Story:** From College Boards to Dashboards

**12. Methodology (brief)**

1. Use QuickSight sample dataset & Q to create visuals quickly.
2. Prepare dataset: rename fields, create calculated fields, set refresh schedule.
3. Create Topic, define named entities and verify Q answers.
4. Build Analysis with Q-powered visuals; refine formatting and titles.
5. Publish Analysis as Dashboard with Q enabled.
6. Build Scenarios and iterate with follow-up questions until recommendation emerges.
7. Generate Data Story, refine narrative, and add Prepared by.

**13. Originality Statement**

I confirm this submission is my original work. Any referenced AWS or Udacity documentation is cited in the README.