

Demystifying Tuition: **Building a Framework for** **Information Quality & Accessibility**

Laura A. Davis^a
Gregory C. Wolniak^a
Casey E. George^b
Glen Nelson^c
Cassie Kwon^a
Emily Zuccaro^b

^a New York University, ^b University of Louisville, ^c Arizona State University

2018 AERA ANNUAL MEETING

April 2018

New York City

Introduction

A LONG TRADITION

of research on the factors that determine higher education costs. e.g., *The Cost Disease* (Baumel, 1967), *The Revenue Theory of Costs* (Bowen, 1980)

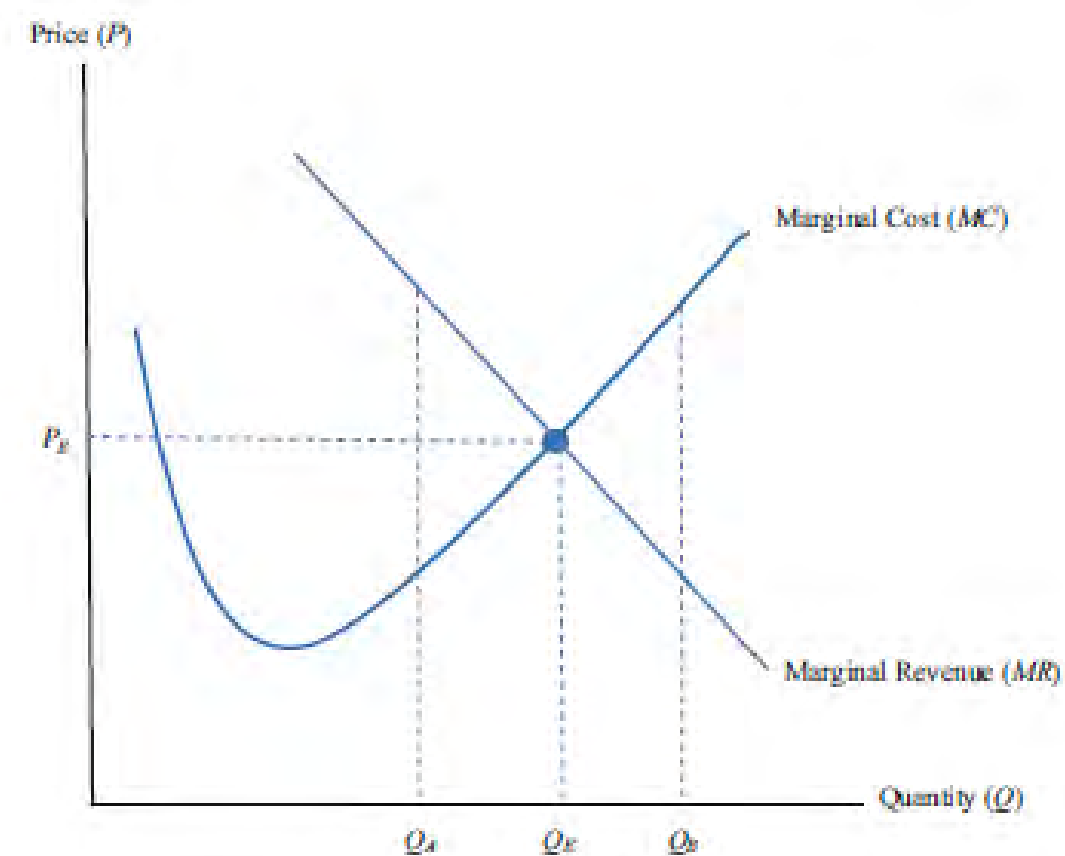
EXTENSIVE EVIDENCE

on the effects of tuition increases, financial aid strategies, and state-level aid programs on *students*

Introduction

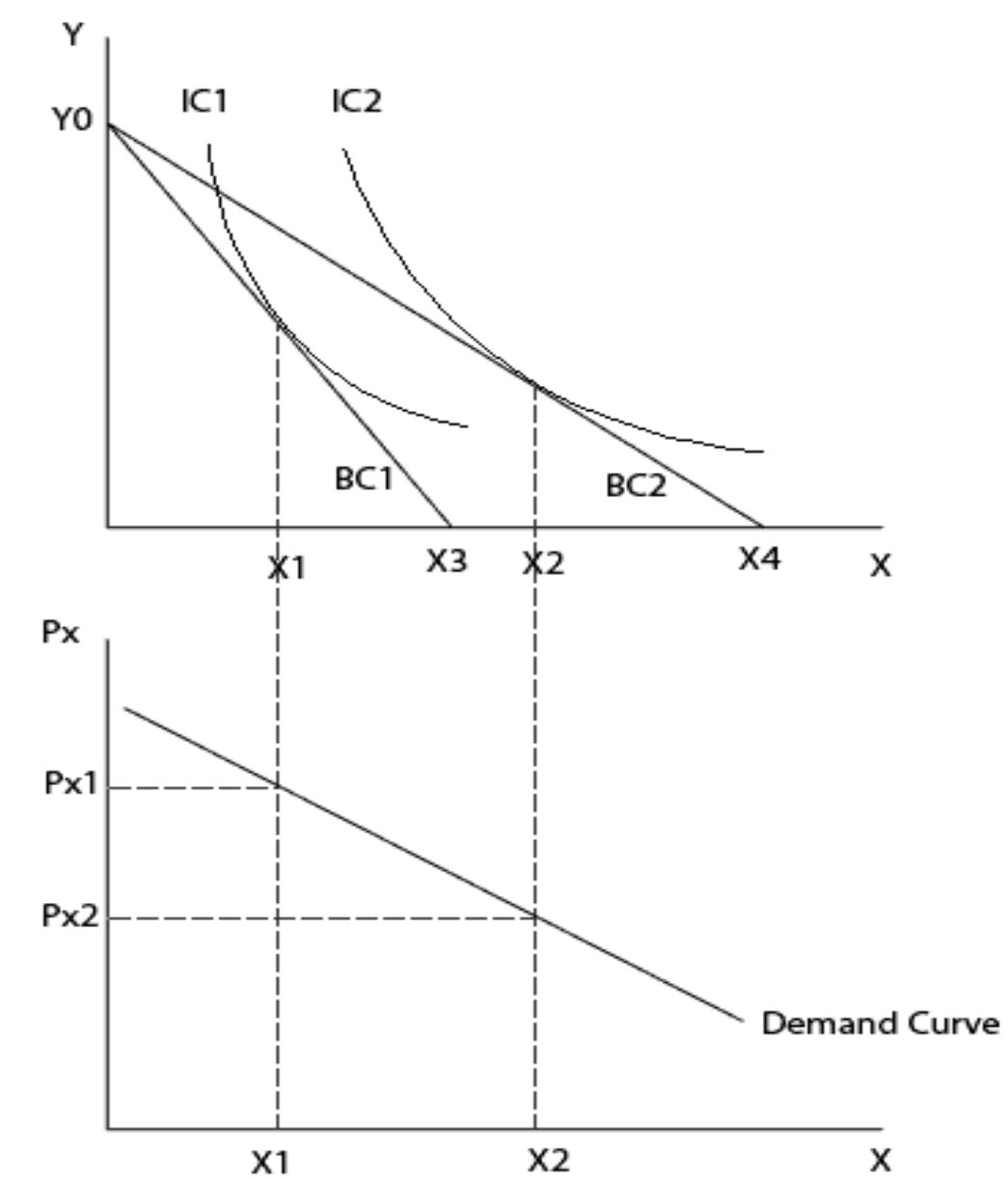
A LONG TRADITION

of research on the factors that determine higher education costs. e.g., *The Cost Disease* (Baumel, 1967), *The Revenue Theory of Costs* (Bowen, 1980)



EXTENSIVE EVIDENCE

on the effects of tuition increases, financial aid strategies, and state-level aid programs on *students*



KEY ASSUMPTION: RATIONAL DECISION-MAKING

The Problem

1. RESPONSIBILITY ON STUDENTS / CONSUMERS

without regard for how institutions' communication strategies influence the public's access to and comprehension of financial information
(anticipated costs / benefits)

“A \$1000 change in college price is associated with roughly a 3–5% difference in enrollment”

2. DECISION-MAKING DETERIORATES WHEN INFORMATION IS NOT ACCURATE OR ACCESSIBLE

a barrier to optimal decision-making occurs when the information available to buyers and sellers is asymmetric and/or imperfect.

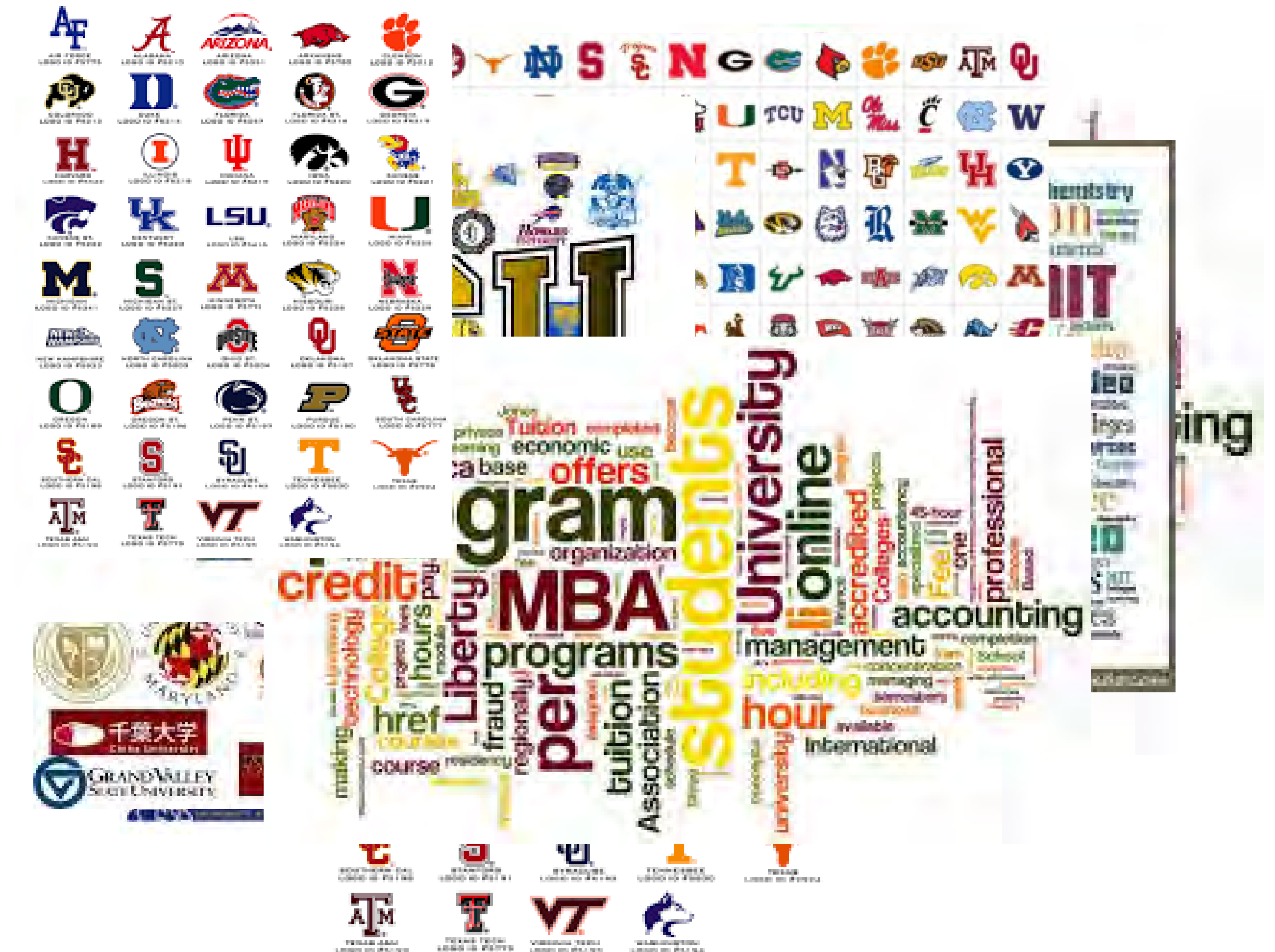


Context

SYSTEM-WIDE COMPLEXITY

More than 7,600 higher education institutions in the U.S.

- Private, Public, For-profit, etc.
- On-line degree programs
- Subsequent / simultaneous attendance at multiple institutions
- Increasingly borderless nature of college
- Differential tuition practices on the rise



Review of Literature | Knowledge Gaps

- Several studies have noted that students from underrepresented minority and lower socio-economic backgrounds may be more sensitive to increases in tuition, potentially due to greater concern for relying on loans to pay for college (Boatman, Evans & Soliz, 2017; Callendar & Jackson, 2005; Paulsen & St. John, 2002).
 - Past research has explored the general misinformation students have about the differences between the published college tuition and the actual net price a family actually would pay (Cheng, 2012).
 - Perna (2006): “higher education institutions are positioned to play a central role in the transfer of information about college costs and financial aid to students and their families” (p.1626), and notes the potential of large-scale initiatives that point students to institutional websites.
- Institutions as key agents in transmitting information to prospective students
 - Bridging evidence from Information & Communication Technology Studies and higher education practices:
 - *Representational Quality*
 - *Contextual Quality*
 - *Accessibility*
 - The user (i.e., prospective students and families) experience

Objectives & Research Questions

Objectives & Research Questions

PURPOSE

The purpose of this study is to examine the transparency in tuition and cost information among public colleges and universities

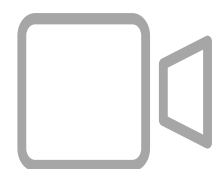
THREE INTERRELATED OBJECTIVES



Along what dimensions does the quality of tuition and cost information presented on institutional websites vary?



How does differential information quality shape user search experiences and conceptions of tuition and costs at a particular institution?



What are the implications of variation in information quality for measurement design?

METHODS OVERVIEW

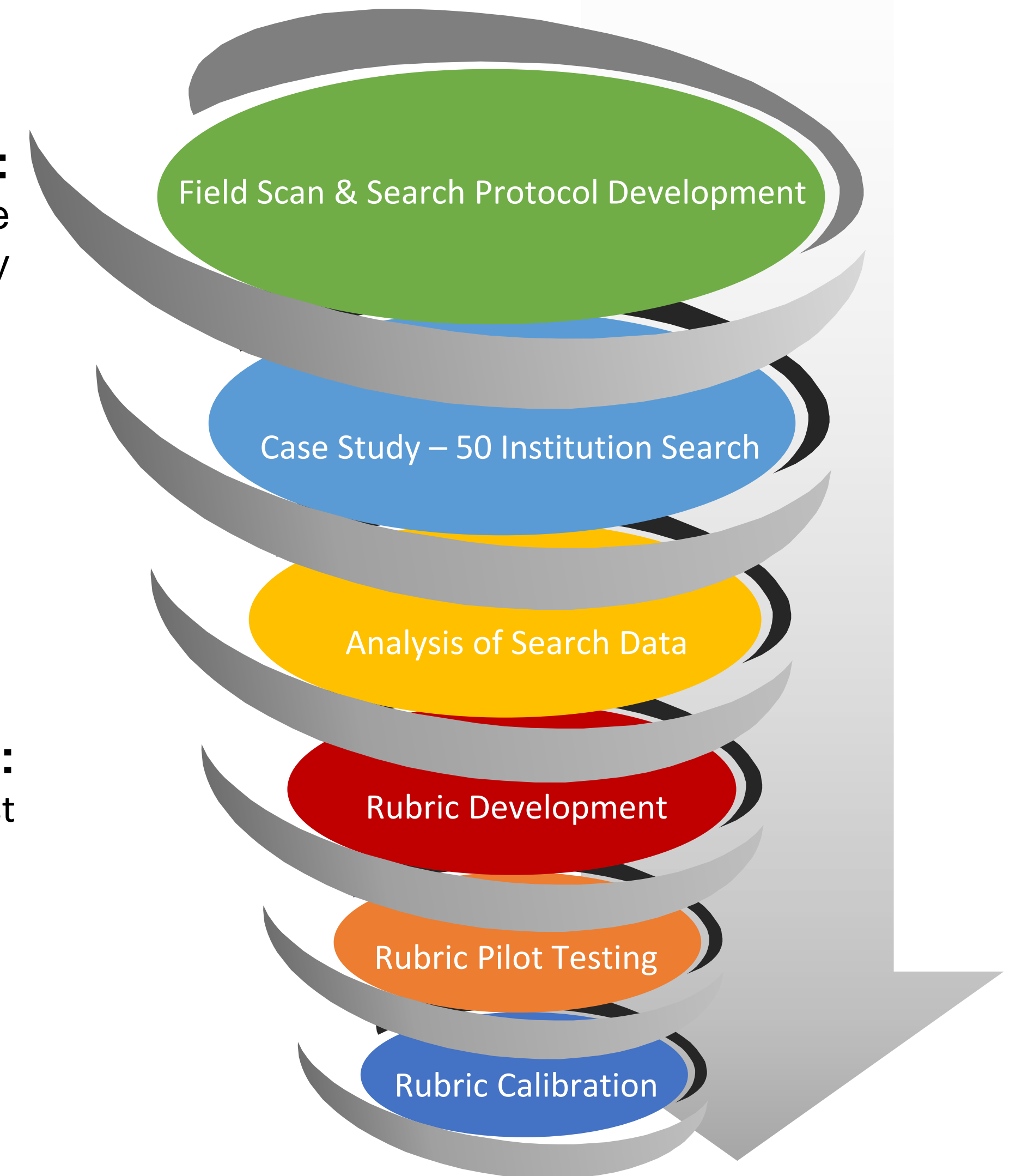
Research Design & Methods

Phase 1:
Information Search Case
Study

OBJECTIVE ONE:
Identifying
Dimensions of
Information Quality
OBJECTIVE TWO:
Exploring
Implications for User
Experience

Phase 2:
Rubric Development & Pilot Test

OBJECTIVE THREE:
Developing a Measure
to Assess Information
Quality

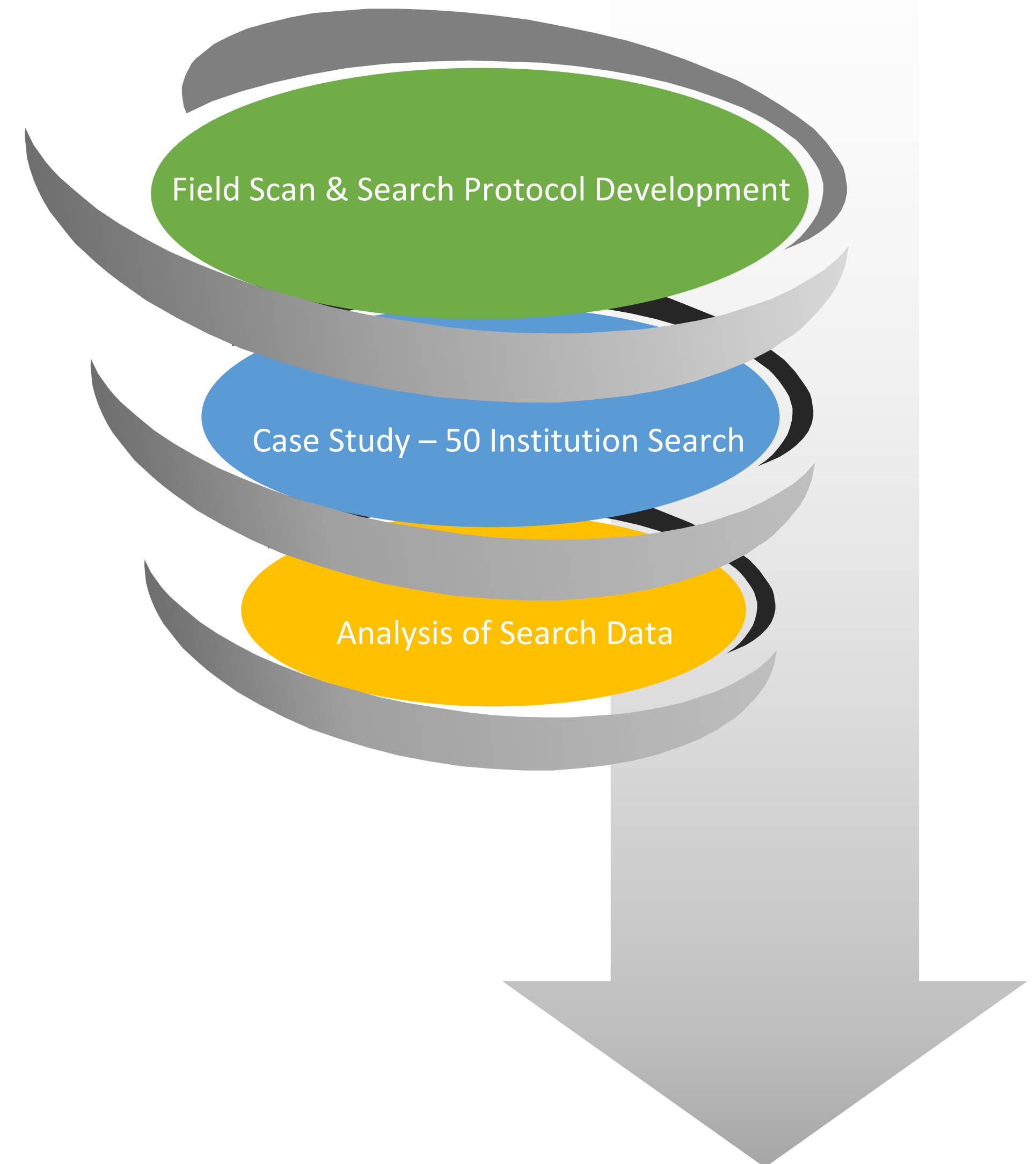


PHASE ONE – CASE STUDY

Information Search Case Study

ACTIVITIES

- Qualitative field scan to identify common structural features and content presentation strategies
- Cyclical analysis of artifacts and protocol refinement
- Interrater comparisons and norming
- Analysis of search data to confirm salience of overarching information quality domains



PHASE ONE – CASE STUDY

Search Protocol Development & Data Collection



Instructions

PROCEDURES

Please include a detailed description of the activities and decisions

PHASE ONE – CASE STUDY

Search Protocol Analysis

Completed Protocol: Cover Page

Completed Protocol: Search Data

Differential Tuition – Case Study
Semi-structured Search Protocol

School: Henderson State UniversityTerm: Semester System

KEY OBSERVATIONS SUMMARY

- TWO DIFFERENT CALCULATOR TOOLS RESULT IN CONFUSION:** The **Net Price Calculator**, found on the Financial Aid Helpful Links sidebar, was out of date (information was current as of 2014-2015 AY); the **Tuition and Fees Estimator** did not contain all of the expense categories needed for students to accurately estimate their needs for financial aid.
- CONFLICTING INFORMATION ACROSS TOOLS / TABLES:** There are actually FIVE different sources of information that provide conflicting results related to costs. Current tuition rate information is not consistent updated across these sources (based on year). The different sources are:
 - The “[What will college cost?](#)” table – based on 2016-2017 information
 - The [Tuition and Fees Estimator](#) tool – based on Fall 2017 information
 - The [Net Price Calculator](#) (outdated) – based on 2014-2015 information
 - The [Cost and Fee Sheet](#) (PDF) – based on 2017-2018 information
 - The [Cost of Attendance](#) tables / page – based on 2016-2017 information
- DISCREPANCIES BETWEEN NET PRICE CALCULATOR AND OTHER 2 CALCULATIONS (manual + estimator tool) MAY REFLECT OUTDATED INFORMATION UTILIZED BY THE NET PRICE CALCULATOR.** Because the Net Price Calculator is based on 2014-2015 AY tuition and fees, the resulting calculations may not be accurate, when compared to the other tool’s information (which reflects 2017-2018 rates).
- DT EXISTS BY WAY OF COURSE SPECIFIC FEES AND PROGRAM-COURSE ENROLLMENT CHARGES:** The fees for courses are referenced on the Cost and Fee sheet, but are not outlined in detail there. By downloading the 2017-2018 **Course Fees file** (separate PDF), I was able to see which courses had required additional materials / supplies fees, and which program areas incurred enrollment fees, based on course credit hours. None of the calculators, tools, or COA tables fully account for these fees.

TUITION & FEE COST COMPARISON BY INFORMATION SOURCE:

INFORMATION SOURCE	TUITION	FEES	COMBINED
The “ What will college cost? ” table – based on 2016-2017 information -	6450	1666	8116
The Tuition and Fees Estimator tool – based on Fall 2017 information	6630	1681	8311
The Net Price Calculator (outdated) – based on 2014-2015 information	?	?	7860
The Cost and Fee Sheet (PDF) – based on 2017-2018 information	6630	1833.50	8463.50
The Cost of Attendance tables / page – based on 2016-2017 information	?	?	8140

Differential Tuition – Case Study
Semi-structured Search Protocol


g. I open the **cost and fee sheet** downloaded from this page.

This page includes a much more detailed breakdown of the fees, but some of the fee categories lack context / clarity in terms of whether they are course-specific, program-specific, or based on some other criteria (such as housing / residential life options).

Note the disclaimer:
The University charges various fees each semester based on the department and course number of certain classes. Please see the course fee listing to determine the fees associated with a specific class if any.

g. I have no idea what fee categories such as “Broadcast” and “Communication” mean. While “Communication” includes a parenthetical note “(residence halls)” – it’s still not clear whether this means that it only applies to students in certain halls, or if it is applied to all student accounts as part of funding services provided to residence halls. I wonder where I can get more detailed explanations of these fee categories.

g. **Cost and Fee PDF**



#2

#3

#4



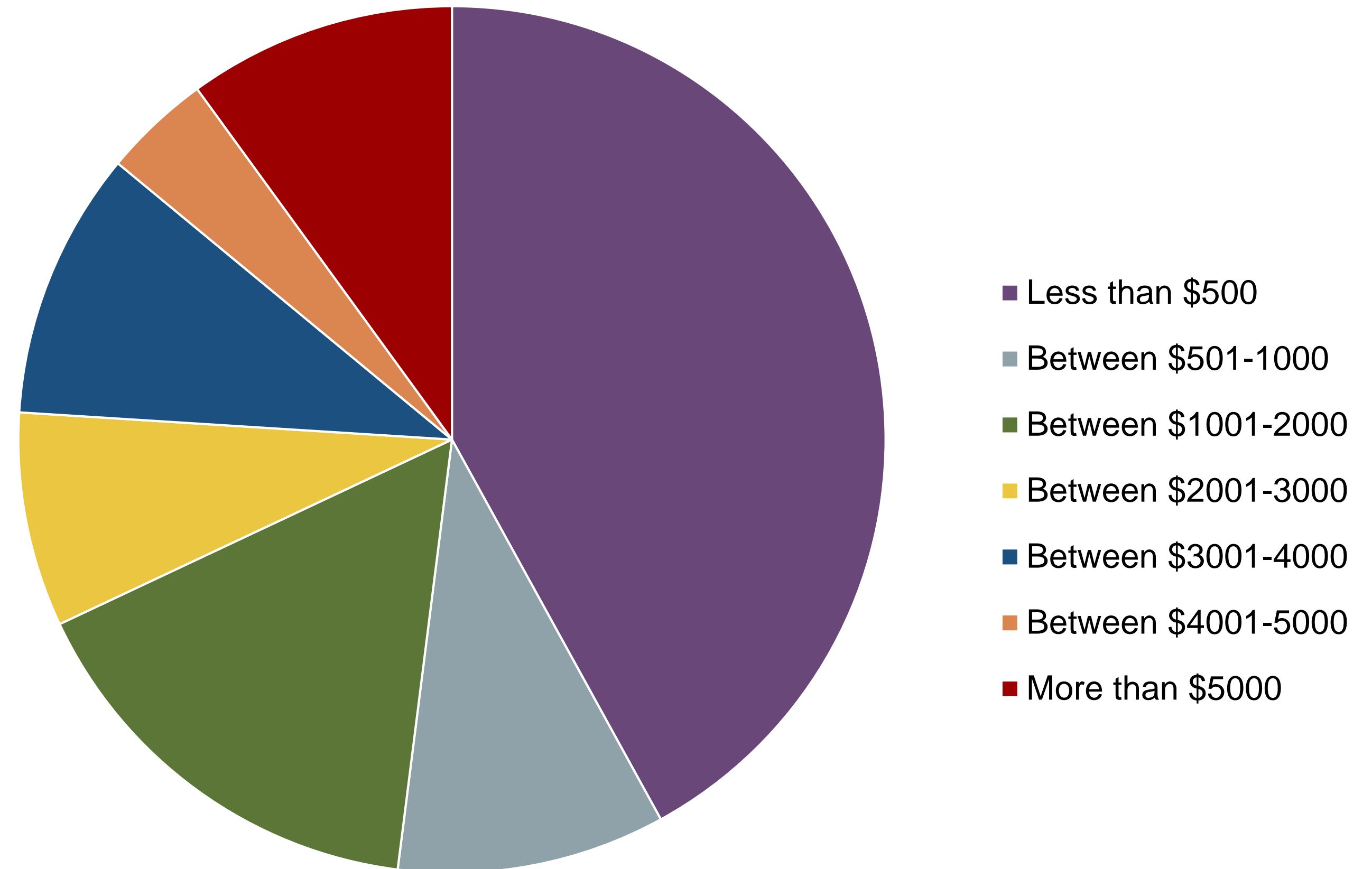
PHASE ONE – CASE STUDY

Search Protocol Analysis

Estimate the difference between manual & net price calculator results

EXAMPLE:

Distribution of observed cost discrepancies between manual and net price cost calculator results



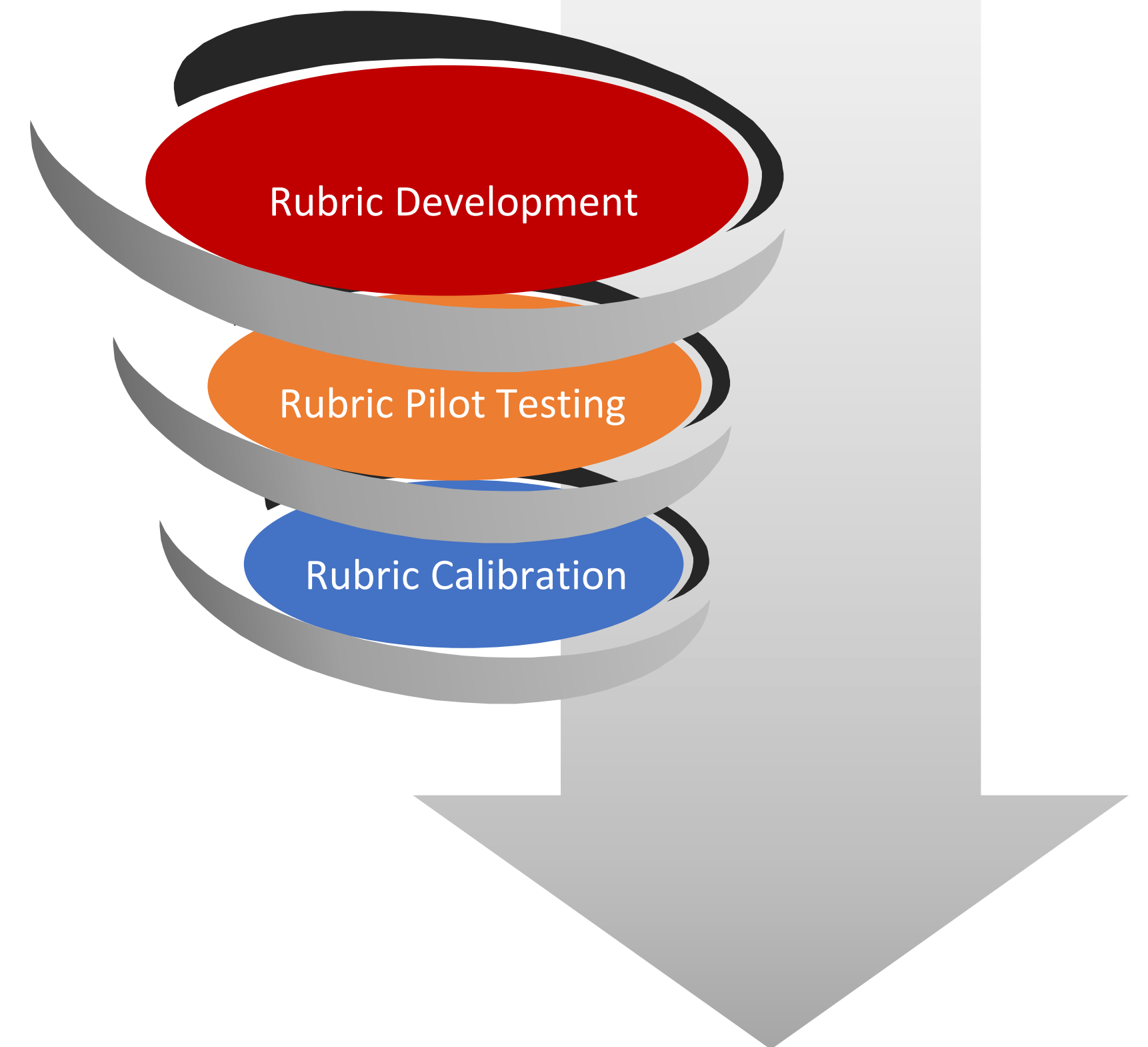


PHASE TWO – RUBRIC PILOT
TEST

Rubric Development & Pilot Test

ACTIVITIES

- Cluster data excerpts around theorized dimensions of information quality
- Scale evidence and define criteria; specify indicators for each scaled dimension
- Conduct field test with external users to assess usability of instrument and needs for revision of measure





Rubric Pilot Testing

PHASE TWO – RUBRIC PILOT TEST

Rubric Pilot Testing

College Tuition and Cost Information Quality Rubric

ver. 03082018

QUALITY DIMENSION	DEFINITION	GUIDING QUESTIONS	LEVEL 1 Ineffective	LEVEL 2 Somewhat Effective	LEVEL 3 Generally Effective	LEVEL 4 Highly Effective
DOMAIN 1: REPRESENTATIONAL QUALITY						
Information Clarity & Ease of Understanding	Tuition and fee summaries are presented clearly, by student enrollment level and residency status; Summaries are accompanied by detailed fee breakdowns and explanations	<ul style="list-style-type: none">Does the page provide a clear estimate of total cost of attendance, according to enrollment load (e.g., full-time, part-time) and residency status (e.g., in-state vs. out-of-state)?Does the page provide detailed information on tuition rates (for example, by credit hour) and fees, by category?	<ul style="list-style-type: none">Tuition and fees are presented as a combined costLittle or no information is available on how tuition and fees are calculatedFee categories are not clearly outlinedTuition rates are not specific to enrollment profile (e.g., full-time, part-time, undergraduate, graduate)	<ul style="list-style-type: none">Tuition is presented as flat rate (without explanation or terms). Fees are combined into abstract categories.Though fees and tuition are noted as separate costs, the combined cost of attendance includes other expenses that are not clearly defined.How fees are assessed (and whether they apply to all students) is unclear.Course and registration fees cannot be accurately estimated without registering for classes.	<ul style="list-style-type: none">A breakdown of tuition and fees is available, in addition to the combined cost of attendanceExpense categories and cost estimates factored into the combined cost of attendance are outlinedFee categories include descriptions.Tuition and fee totals are presented by both enrollment load (e.g., full-time, part-time) and residency statusCourse materials and course enrollment fees are presented in detail, but totals may not be estimable prior to enrollment.	<ul style="list-style-type: none">The breakdown tuition and fees is clearly presented alongside the combined cost of attendanceThe combined cost of attendance is easy to find; all expense categories are clearly labeled and explanations are provided for these estimatesFee categories and assessment terms are clearly delineated and allow consumers to manually calculate total costs based on their enrollment plansUndergraduate tuition and fee totals are presented by both enrollment load (e.g., full-time, part-time) and residency statusAny supplemental course fees are outlined with explanations that help students estimate their total costs prior to enrollment
Information Interpretability & Language Use	Information is conveyed using appropriate language for the audience. Relevant terms are defined in a straightforward manner. Language and terms are used consistently.	<ul style="list-style-type: none">Are unfamiliar or institutionally-specific terms defined in straightforward language?Are terms used consistently?Is the content presented in language	<ul style="list-style-type: none">The language used is inappropriate or confusing for a wide audienceInformation is conveyed in technical or institutionally-specific termsTechnical terms are not defined	<ul style="list-style-type: none">Language is marginally appropriate for a wide audienceSome information is conveyed in a technical or institutionally-specific termsNumerous technical terms are not defined; Definitions may be overly complex or specific	<ul style="list-style-type: none">Information is conveyed using an effective combination of technical or institutionally-specific terms and non-technical languageMost technical terms are defined; Definitions are straightforwardTerms are used consistently and accurately across pages	<ul style="list-style-type: none">The language used is appropriate for the general public with only a minimal use of technical or institutionally-specific termsTechnical and context-specific terms are defined clearly, with applicable references or source information



Results

CASE STUDY FINDING 1	CASE STUDY FINDING 2	PILOT TEST FINDING
<div>Convergence ⇒ Fragmentation</div>		
<div>Patterns in design of User Flow Information organized sequentially from general to specific Information converging from multiple sources Disconnect between local and state systems Tools and resources misaligned with local policy</div>		

CASE STUDY FINDING 1

Converging Information

Cost of Attendance

Your Financial Aid cost of attendance (or "cost budget") is an estimation of the expenses you will incur as a student while attending the University of California, Santa Barbara. Some of the figures used in the cost of attendance are averages derived from the Cost Of Attendance Survey (COAS) administered by the University of California, Office of the President, and updated annually for inflation. The survey is the best way to estimate student expenses at UCSB.* Other figures are fixed (such as student fees, non-resident tuition, and on-campus room and board). The cost of attendance is used to determine the maximum amount of Financial Aid in your award letter.

These figures may not be final; actual tuition, fees, and charges are subject to change by the Regents of the University of California or, as authorized, by the President of the University of California. Accordingly, final approved levels and charges may differ from the amounts shown.

* You can also view local housing cost information on the [UCSB Community Housing](#) website. Keep in mind local averages are not used to determine student cost budgets.

- Academic Year
 - 2018-2019
 - 2017-2018
- Education Level
 - Undergraduate
 - Graduate
- Residency
 - California Resident
 - Non-California Resident
- Housing
 - Commuter
 - Off-Campus
 - University Apartments
 - University Residence Halls

View Cost of Attendance

2018-2019 Undergraduate California Resident Off-Campus

Item	Amount
Tuition	\$12,630
Campus Based Fees	\$1,842
Books And Supplies	\$1,158
Health Care Allowance	\$3,357
Loan Fees	\$108
Rent	\$7,533
Food	\$4,011
Utilities	\$399
Telephone/Cell Phone	\$330
Transportation	\$864
Personal Expenses	\$1,584
Total	\$33,816

UC San Diego

Estimated 2018-2019 Undergraduate Cost of Attendance for a Nine-Month Academic Year (3 Quarters) All Amounts Are Subject to Change^c

ESTIMATED COST OF ATTENDANCE	LIVING WITH PARENTS	ON-CAMPUS HOUSING	OFF-CAMPUS HOUSING
Tuition and Fees^a			
CA Resident Tuition/Fees	\$14,273	\$14,273	\$14,273
UC Systemwide Tuition/Fees	\$12,630		
UC San Diego Campus Fees	\$1,643		
Housing and Meals	\$6,369	\$13,733	\$13,118
Books and Supplies	\$1,102	\$1,102	\$1,102
Transportation	\$1,472	\$529	\$1,066
Personal Expenses	\$1,609	\$1,458	\$1,536
Estimated CA Resident Cost Totals^b	\$24,825	\$31,095	\$31,095
Non-CA Resident Supplemental Tuition	\$28,014	\$28,014	\$28,014
Non-CA Resident Cost Totals^d	\$52,839	\$59,109	\$59,109

- a) All new UC San Diego freshmen will be billed an average one-time Orientation fee of \$176 and new transfers an average one-time Orientation fee of \$108. All new freshmen and transfers will be billed a one-time Document fee of \$165. Any prior payments you made to the university (such as Student Intent to Register and Housing deposits) will show as credits towards your fall bill.
- b) The Cost of Attendance (COA) does not include the UC San Diego Student Health Insurance Plan (SHIP) of \$2,012. The COA and award packages will be revised late October for students who do not opt out. For additional UC San Diego SHIP information, visit <https://wellness.ucsd.edu/studenthealthinsurance/uc-ship/Pages/default.aspx>.
- c) "Actual tuition, fees, and charges are subject to change by the Regents of the University of California and could be affected by increases or reductions in State funding, or other developments."
- d) Non-California resident students applying for financial aid: Non-California residents pay Non-Resident Supplemental Tuition (currently estimated to be \$28,014 annually) in addition to charges paid by in-state students. Along with the family's resources, non-residents will only be considered for Federal Pell Grant, Federal Work-Study and loans to help meet their educational costs, if they qualify. Loans must be repaid.

Cost

Estimated Budget for Undergraduate Students 2017-2018

(As of June 2017)

LIVING ARRANGEMENT	TUITION AND FEES	LIVING EXPENSES*	ESTIMATED TOTAL COST
On-Campus**	\$15,501	\$18,310	\$33,811
Off-Campus	\$15,501	\$16,380	\$31,881
Living at Home	\$15,501	\$10,484	\$25,985
On-Campus (Non-Resident)	\$43,515	\$18,310	\$61,825

For the financial aid and scholarship opportunities available to you, click [here](#).

* Living expenses includes books and supplies, room and board, and estimated personal and transportation costs; may vary per individual student.

** Vista del Campo, Vista del Campo Norte, Camino del Sol and Puerta del Sol housing are treated as on campus.

Estimated costs and fees are subject to change.

For the most current and detailed information about the chart above, visit ofas.uci.edu and reg.uci.edu/fees.

FRAGMENTATION

CASE STUDY FINDING 1

Converging Information:

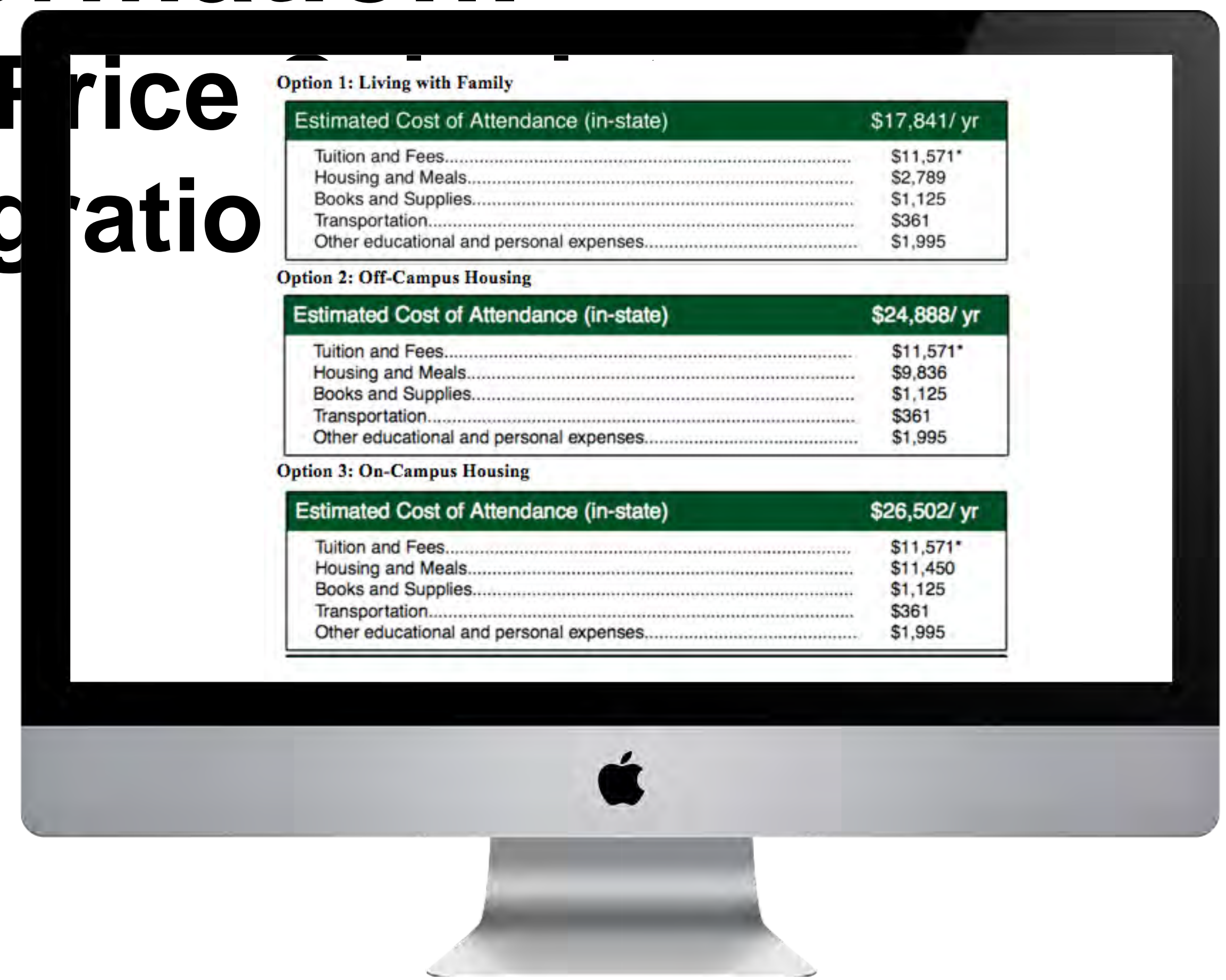
Net Price Integration

OUTDATED INFORMATION

Net Price Calculators often employed outdated tuition and fee information, derived from previous academic years, in some cases dating back as far as AY 2012-2013.

CAMPUS-LEVEL POLICIES

Campus-level policies, such as on-campus housing requirements, were not consistently reflected in Net Price Calculator results.



CASE STUDY FINDING 1

Converging Information: Net Price Calculator Integration

DIFFERENTIAL TUITION POLICIES

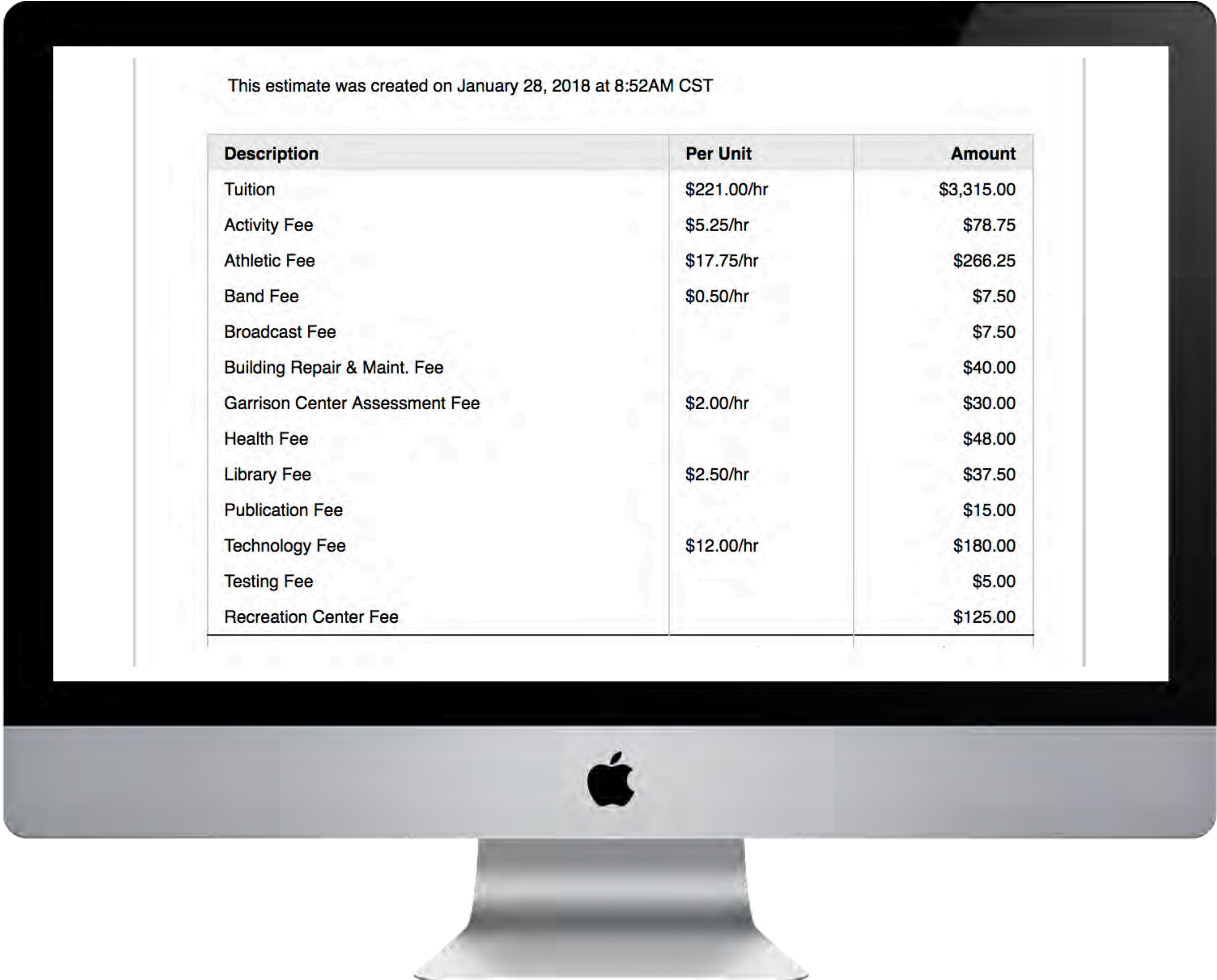
Though more than three-quarters of institutions employed differential tuition policies at the course, program, or undergraduate class level, fewer than five of the Net Price Calculators accounted for DT in estimating cost of attendance.



Converging Information: Net Price Calculator Integration

DIFFERENTIAL TUITION POLICIES

Though more than three-quarters of institutions employed differential tuition policies at the course, program, or undergraduate class level, fewer than five of the Net Price Calculators accounted for DT in estimating cost of attendance.

A computer monitor with a silver base and a black bezel. The screen displays a net price calculator estimate. At the top, it says "This estimate was created on January 28, 2018 at 8:52AM CST". Below this is a table with three columns: Description, Per Unit, and Amount. The table lists various fees and their corresponding costs.

This estimate was created on January 28, 2018 at 8:52AM CST		
Description	Per Unit	Amount
Tuition	\$221.00/hr	\$3,315.00
Activity Fee	\$5.25/hr	\$78.75
Athletic Fee	\$17.75/hr	\$266.25
Band Fee	\$0.50/hr	\$7.50
Broadcast Fee		\$7.50
Building Repair & Maint. Fee		\$40.00
Garrison Center Assessment Fee	\$2.00/hr	\$30.00
Health Fee		\$48.00
Library Fee	\$2.50/hr	\$37.50
Publication Fee		\$15.00
Technology Fee	\$12.00/hr	\$180.00
Testing Fee		\$5.00
Recreation Center Fee		\$125.00



Results

CASE STUDY FINDING 1	CASE STUDY FINDING 2	PILOT TEST FINDING
<div>Convergence ⇒ Fragmentation</div>	<div>Selling ≠ Showing</div>	
<div>Patterns in design of User Flow Information organized sequentially from general to specific Information converging from multiple sources Disconnect between local and state systems Tools and resources misaligned with local policy</div>	<div>Admissions page as primary entry point Marked shifts in language & structure as user advances to more detailed information Disconnect between sales pitch and calculations Discrepant terminology across institutions signals different sales strategies and agendas</div>	

Selling vs. Showing

Costs & Deadlines

Weber State University, which is home to the most comprehensive offering of undergraduate programs in the state, is also among the most affordable universities in the West.

Costs for the 2017/2018 school year

	In-state (Utah residents)*	Out-of state (non-resident)*
Full-Time Tuition (2 semesters)	\$4,773	\$14,321
Student Fees	\$939	\$939
Books (estimated)	\$800	\$800
Room & Board (on-campus housing)	\$4,520-9,896	\$4,520-9,896

*[definition of resident and non-resident](#) students.

For future school years, tuition costs for full-time students are determined yearly by the Utah State Legislature and will be posted on this site when available.

Tuition & Fees

[IPFW.edu](#) > [Admissions](#) > [Tuition and Financial Aid](#) > Tuition & Fees

Great education, affordable price.

You don't have to break the bank to pursue your dreams. Check out the information below to see exactly what the tuition and fees are for an education from IPFW.

Undergraduate Cost of Attendance for 2017-2018

	In-State and Reciprocity Residents	MSEP Residents	Out-of-State Residents
Tuition & Fees	\$8,329	\$12,493	\$20,004
Housing*	\$5,996	\$5,996	\$5,996
Total	\$14,295	\$18,459	\$25,970

These estimates are for full-time undergraduates enrolled in 15 credit hours for fall and spring semester. Most courses are 3 credit hours. For students taking classes part time, the cost per credit hour is \$277.65 (in-state), \$666.80 (out-of-state), and \$416.45 (MSEP).

*Actual cost may vary based on student choice, travel habits, and academic major.

Visit ipfw.edu/tuition for the most current tuition information.

CASE STUDY FINDING 2

Selling vs. Showing

Instructional Enhancement Fees

Instructional Enhancement Fees (IEF) will be charged per credit hour

\$14.00	COBA Dillard College of Business Administration
\$16.00	COED West College of Education
\$15.00	COFA College of Fine Arts
\$24.00	COHSHS College of Health Sciences and Human Services
\$14.00	COHSS College of Humanities and Social Services
\$20.00	COSM College of Science and Math
\$5.00	MWSU Instructional Enhancement Fee
\$70.00	AMUS Applied Music Fee (flat rate)

Differential Fees

Additional Differential Enhancement Fees will be charged per credit hour

\$9.00	MENG	Engineering Differential Instructional Enhancement Fee
\$9.00	PETE	Engineering Differential Instructional Enhancement Fee
\$32.00	DNHY	Dental Hygiene Instructional Enhancement Fee
\$32.00	NURS	Nursing Differential Instructional Enhancement Fee
\$16.00	MUSC	Music and Applied Music Differential Instructional Enhancement Fee

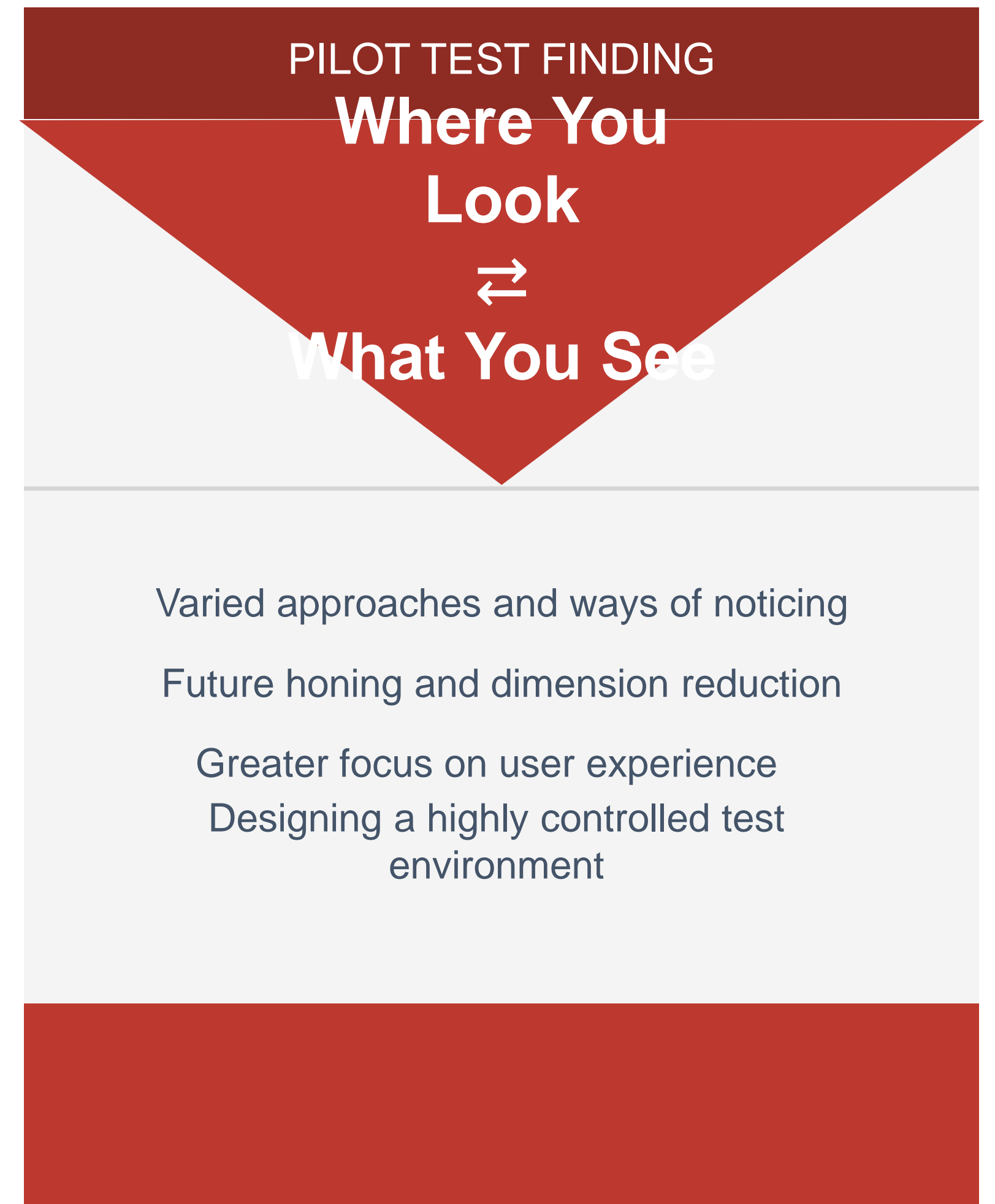
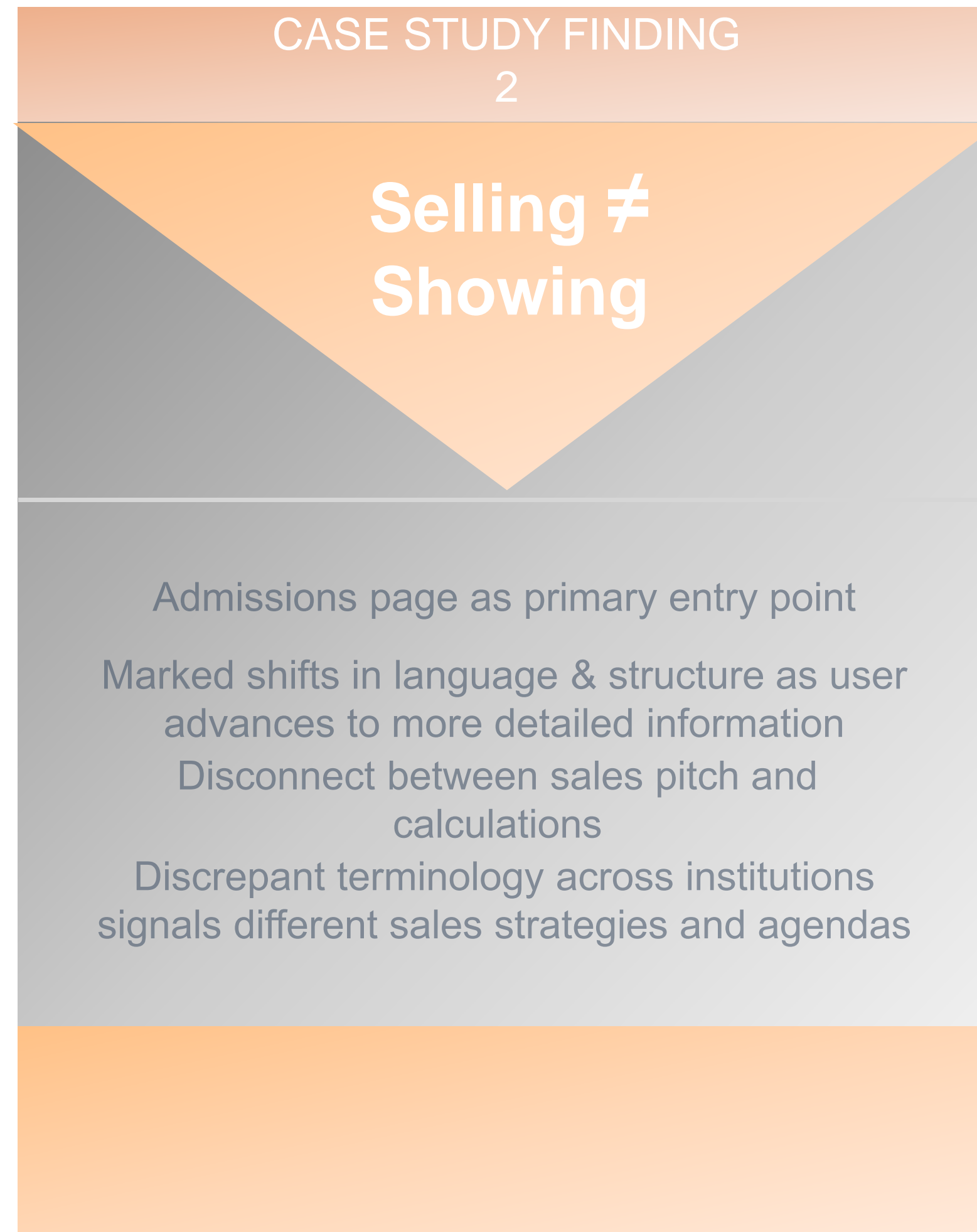
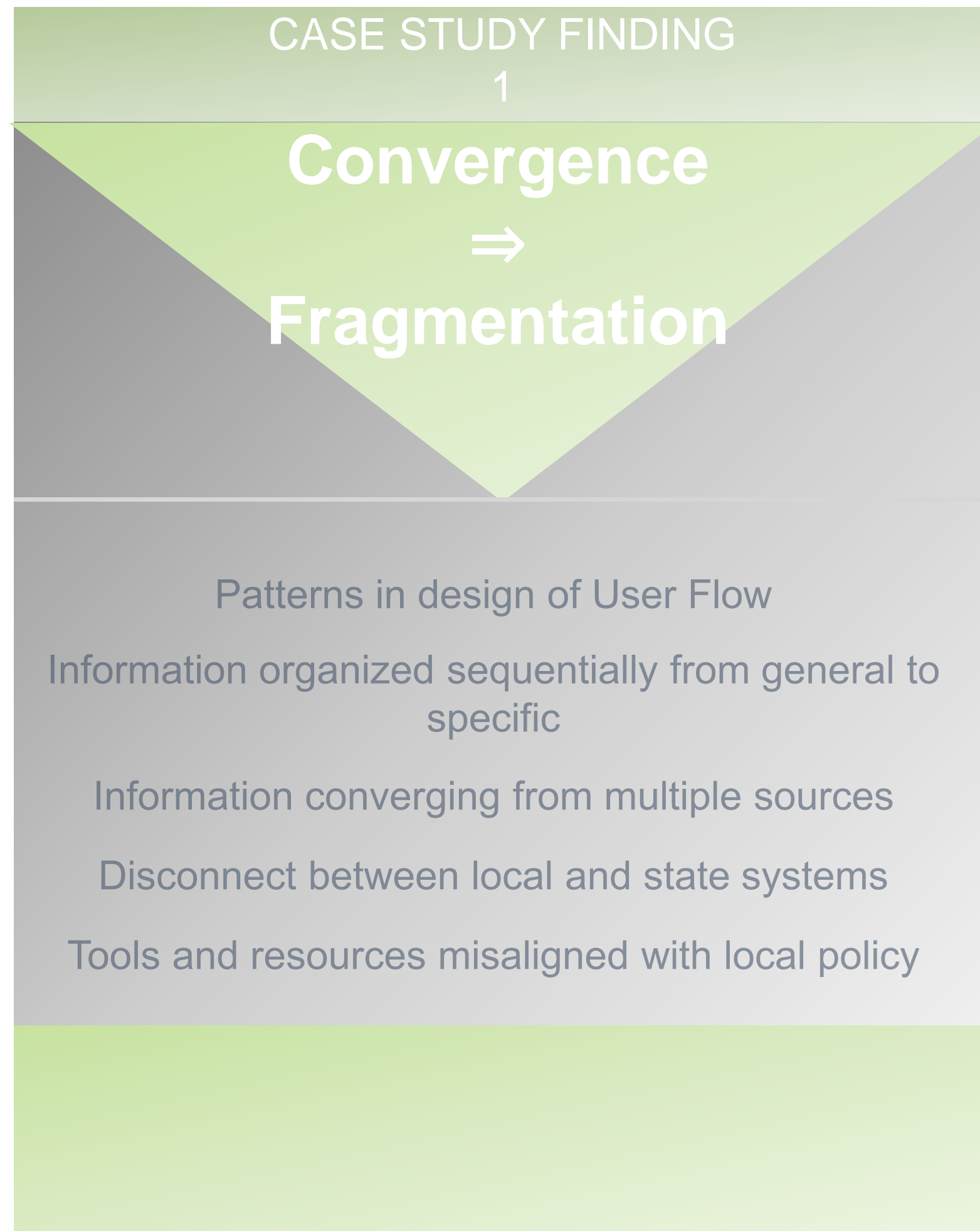
NC STATE UNIVERSITY

CASHIER'S OFFICE & STUDENT ACCOUNTS

Itemization of Required Undergraduate Fees 2017 Fall - Spring 2018 Semesters Rate for 12+ Credit Hours

<u>Semester Fee Description</u>	<u>Term</u>	<u>Amount</u>
Union Activity Board Fee	17F	\$9.81
Student Publications Fee	17F	\$13.50
Student Government Fee	17F	\$7.75
Student Legal Services Fee	17F	\$8.25
School (Student Association) Fee	17F	\$2.50
Student Center Operations Fee	17F	\$63.69
Student Center Repairs and Renovations Fee	17F	\$22.90
Student Programming and Arts	17F	\$117.08
Sustainability	17F	\$2.50
Recreational Sports (Incl Intramurals)	17F	\$83.68
Association of Student Governments	17F	\$0.50
Campus Security Fee	17F	\$15.00
Intercollegiate Athletics Fee - Operations	17F	\$116.00
Student Health Service - Operations	17F	\$196.00
Educational & Technology Fee	17F	\$219.64
Transit Operations (Bus Service)	17F	\$96.50
Thompson Theatre Building - Indebtedness	17F	\$19.00
Student Health Service - Expansion	17F	\$17.50
Intercollegiate Athletics - Indebtedness	17F	\$48.00
Carmichael Complex - Indebtedness	17F	\$11.50
Student Center - Expansion	17F	\$130.00
Carmichael Complex - Expansion	17F	\$13.75
Carmichael Complex - Addition and Renovation	17F	\$46.25

Results





PILOT TEST USER 2

Tuition & Fees

Clarity

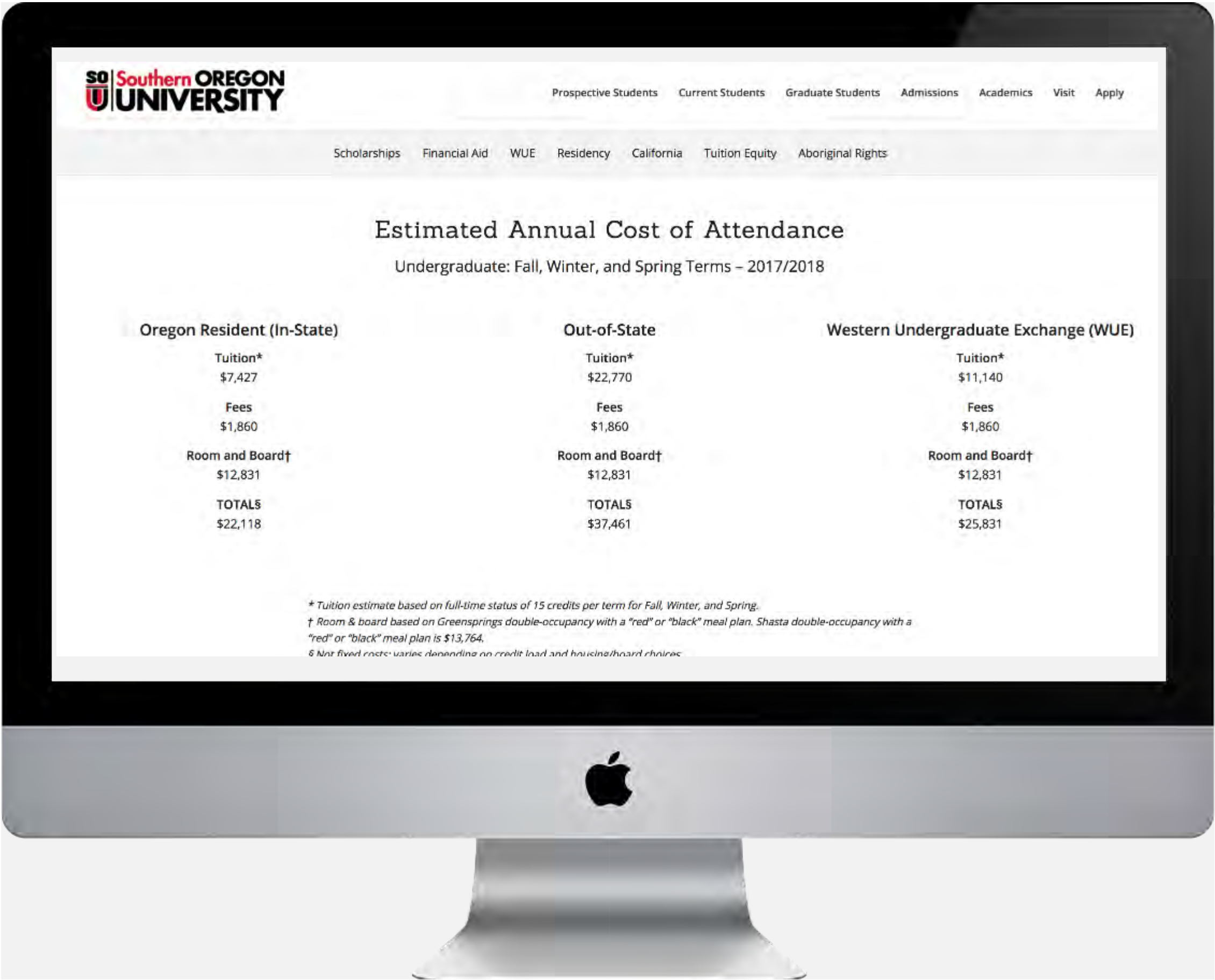
“The Tuition and Fees per credit is very confusing. While it is organized by residency status, and then college, and by credit hours, it is not clear if these are fees or tuition and fees, or what exactly these numbers represent.”

PILOT TEST USER 1

Tuition & Fees

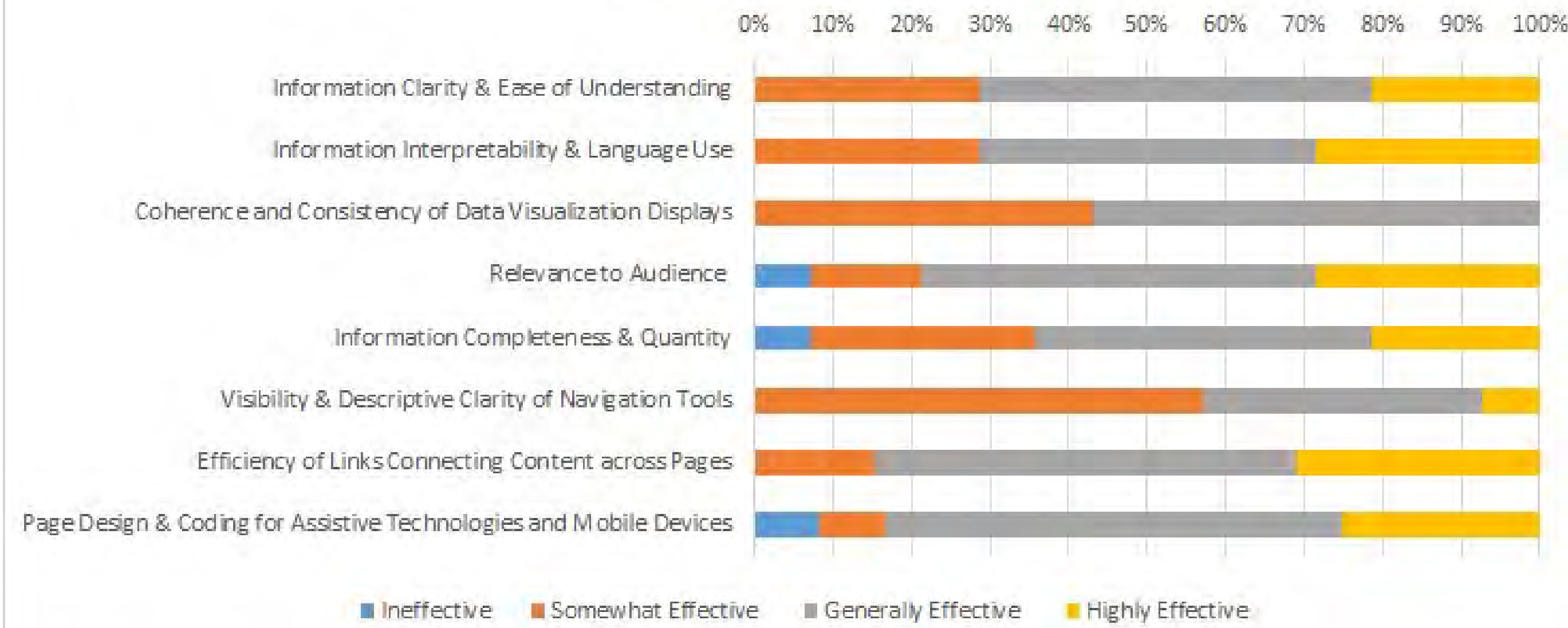
Clarity

“[The site only presents] one amount for both fees and tuition, so the breakdown is unclear. Although that may make it simple to understand, it is still ambiguous where the amount of \$22,770 for tuition is coming from.”





Distribution of Pilot Test Scores by Quality Dimension



RUBRIC PILOT TEST RESULTS

Dimension Scoring

Spread in pilot test scores for each of the quality dimensions

RUBRIC PILOT TEST RESULTS

Perceptions of Rubric

Pilot test users' ratings of instrument usability and perceived value

Conclusions

How financial information is packaged and presented by institutions can be characterized along specific dimensions

Variation in quality occurs along several dimensions ranging from clarity of language use and terminology to the consistency and coherence of visual displays...that affect the user experiences

As information quality can be characterized, it can be assessed/measured

IMPLICAITONS FOR PRACTICE

Websites must be redesigned to:

- ❖ Use clear language
- ❖ Make visual displays and content consistent, coherent and not fragmented across pages and/or departments
- ❖ Smoothly integrate information across state- and consortia-levels
- ❖ Check assumptions regarding students' background knowledge search behaviors that may be embedded in financial aid- and cost-related webpages

THANK YOU

Demystifying Tuition:

Building a Framework for
Information Quality & Accessibility

FOR MORE INFORMATION, CONTACT

LAURA DAVIS

laura.davis@nyu.edu

GREGORY WOLNIAK

gwolniak@nyu.edu