Setup to run exercise during webinar (optional)

1. Install DisImpact in R:

   ```
   install.packages('DisImpact', repos='https://cran.r-project.org')
   ```

   More detailed setup instructions: https://bit.ly/scaling-DI-setup

2. Workshop files: https://bit.ly/scaling-DI-workshop
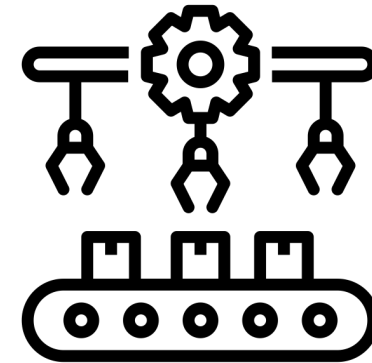
   Download, unzip, and open "1 - Calc DI and Export.R"
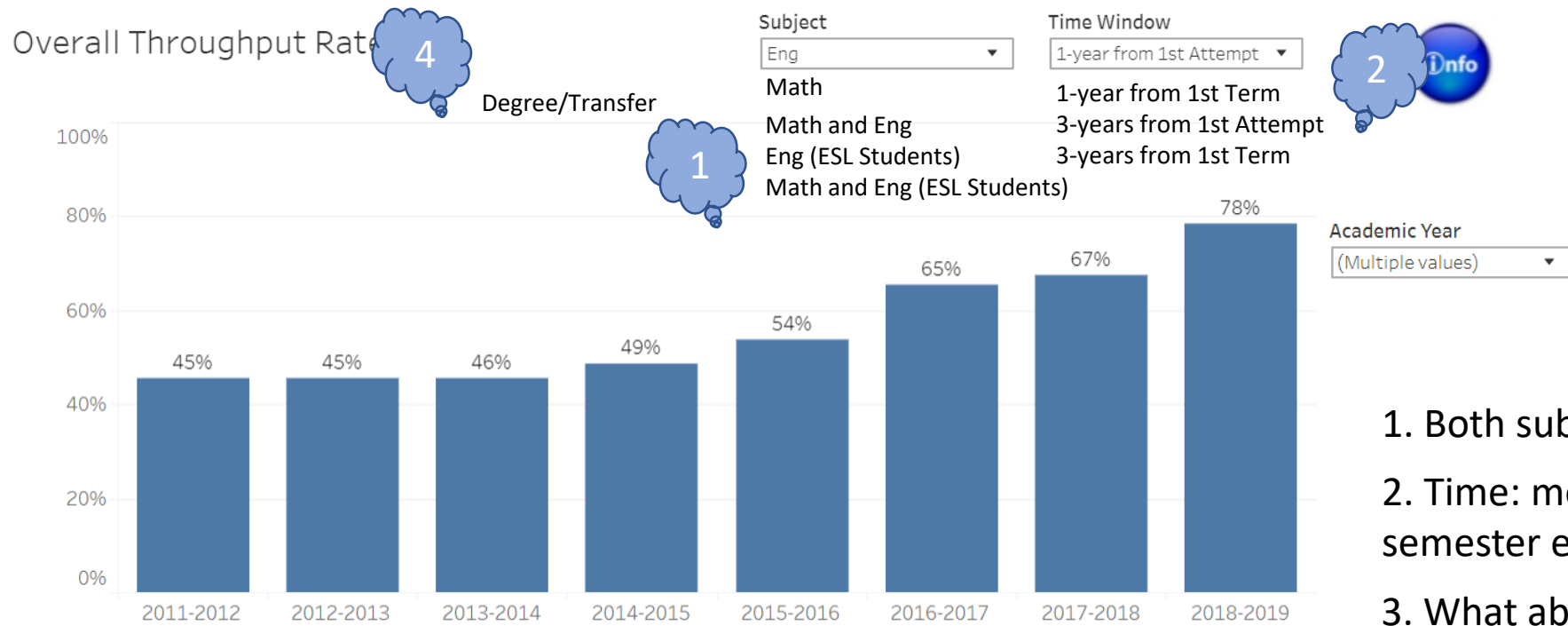
Focus on Equity: Scaling DI Calculations for Rapid Dashboard Development
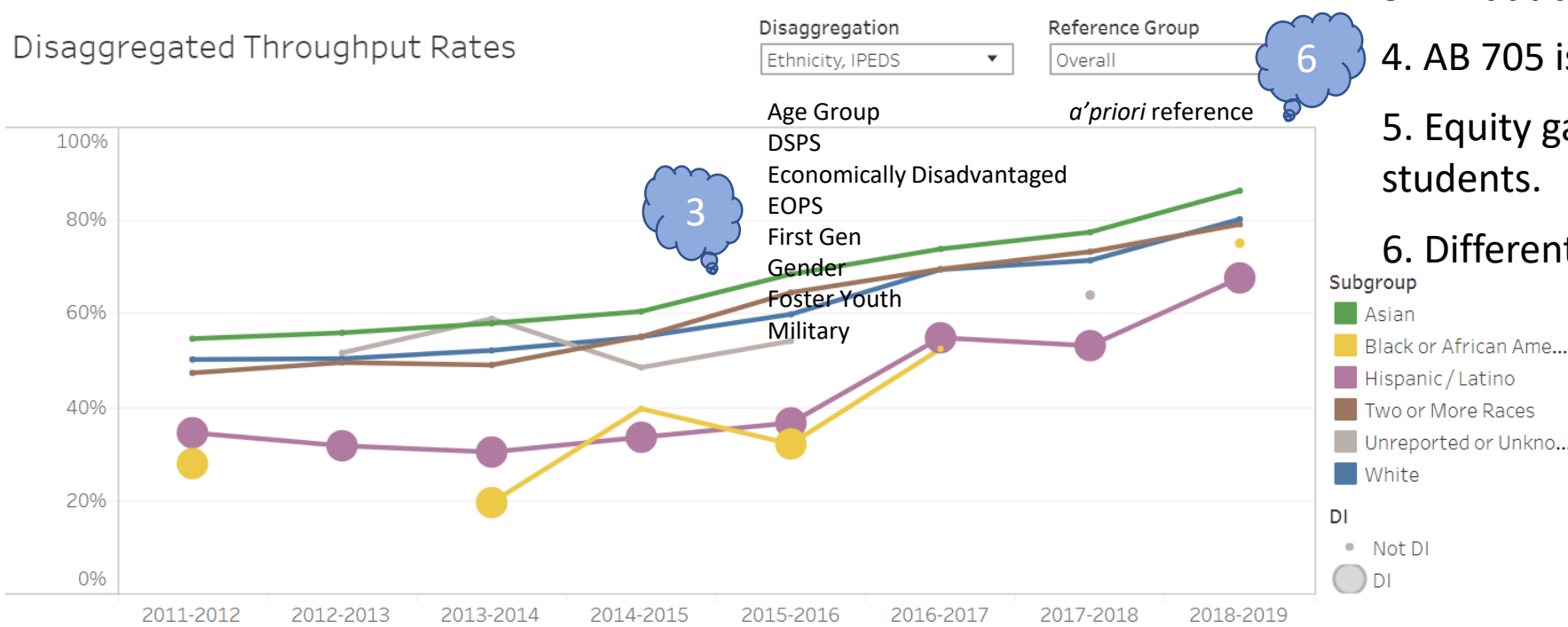
Vinh Nguyen < vnguyen216@ivc.edu >

Loris Fagioli < lfagioli@ivc.edu >

Irvine Valley College

Overall Throughput Rate

Subject
Eng ▼
Math
Math and Eng
Eng (ESL Students)
Math and Eng (ESL Students)

Time Window
1-year from 1st Attempt ▼
1-year from 1st Term
3-years from 1st Attempt
3-years from 1st Term

Academic Year
(Multiple values) ▼

Degree/Transfer

Full time

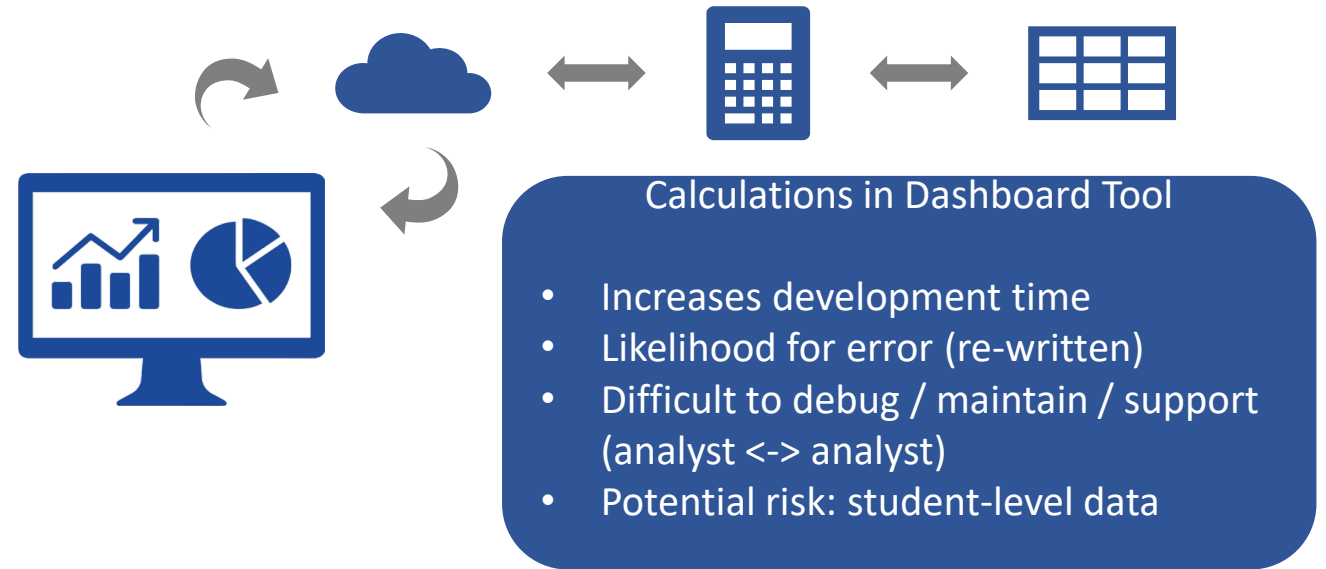Initial goal: *track English and math completions and disaggregate by ethnicity*

1. Both subjects? What about ESL students?

2. Time: measure from 1st attempt (AB 705) vs. 1st semester enrolled (Guided Pathways)

3. What about other disaggregation?

4. AB 705 is for degree/transfer students…

5. Equity gap exist: group X tends to be part time students.
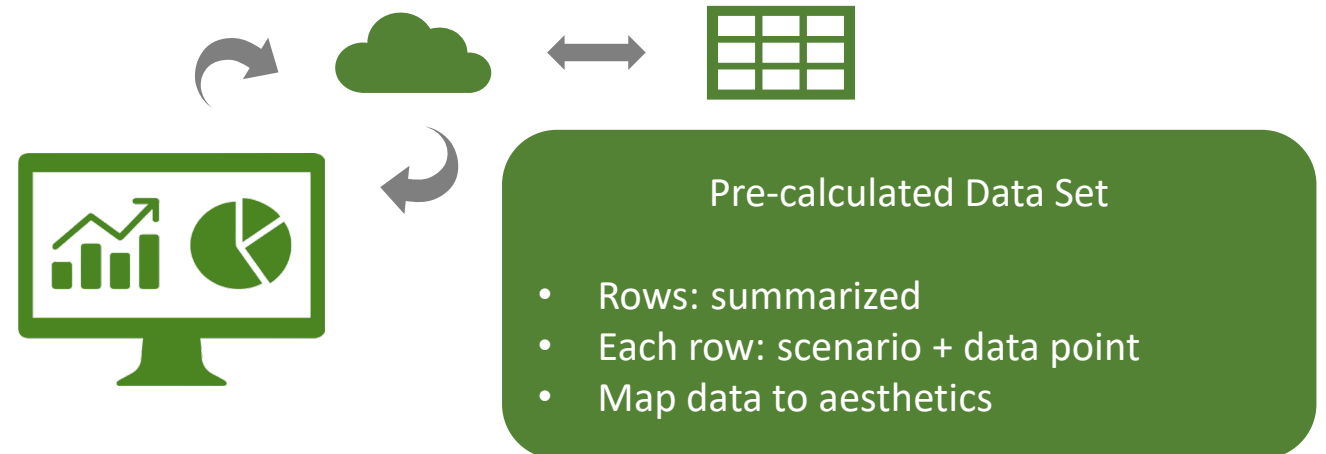
6. Different DI methods / reference groups?

Throughput rate chart (Overall):
- 2011-2012: 45%
- 2012-2013: 45%
- 2013-2014: 46%
- 2014-2015: 49%
- 2015-2016: 54%
- 2016-2017: 65%
- 2017-2018: 67%
- 2018-2019: 78%

Disaggregated Throughput Rates

Disaggregation
Ethnicity, IPEDS ▼

Reference Group
Overall ▼

a'priori reference

Age Group
DSPS
Economically Disadvantaged
EOPS
First Gen
Gender
Foster Youth
Military

Subgroup
- Asian
- Black or African Ame…
- Hispanic / Latino
- Two or More Races
- Unreported or Unkno…
- White

DI
- Not DI
- DI

"Death by 1,000 filters…"
(a lot of work)

Development Approaches
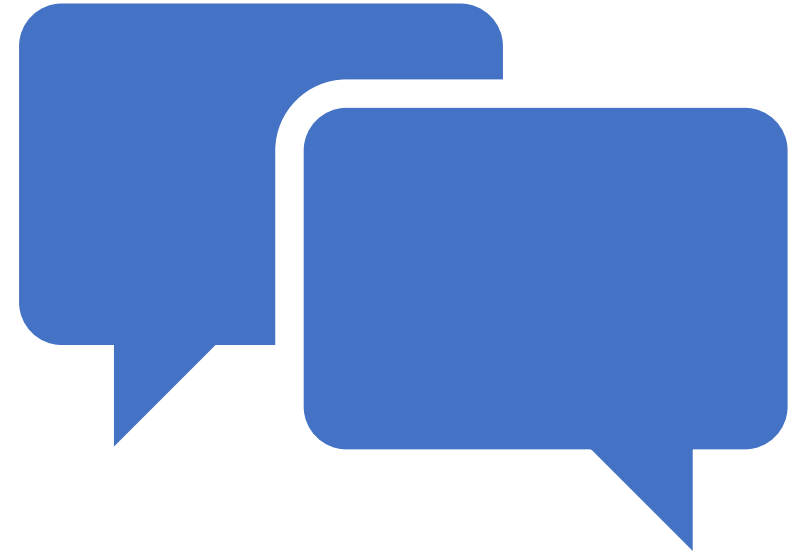
1. On-the-fly: filtering / disaggregation / calculations

Calculations in Dashboard Tool

- Increases development time
- Likelihood for error (re-written)
- Difficult to debug / maintain / support (analyst <-> analyst)
- Potential risk: student-level data

2. Pre-calculations: rows as data points

Pre-calculated Data Set

- Rows: summarized
- Each row: scenario + data point
- Map data to aesthetics

Proposed Workflow

Student-level data → di_iterate(…) → Summarized data → Visualize with Dashboard
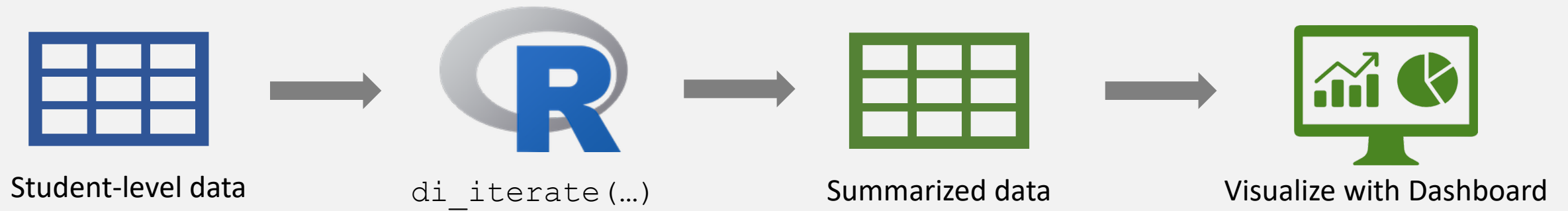
Pause for Questions

DisImpact: GPL-3 License (No Warranty)

This program is free software: you can redistribute it and/or modify
it under the terms of the GNU General Public License as published by
the Free Software Foundation, either version 3 of the License, or
(at your option) any later version.

This program is distributed in the hope that it will be useful,
but WITHOUT ANY WARRANTY; without even the implied warranty of
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the
GNU General Public License for more details.
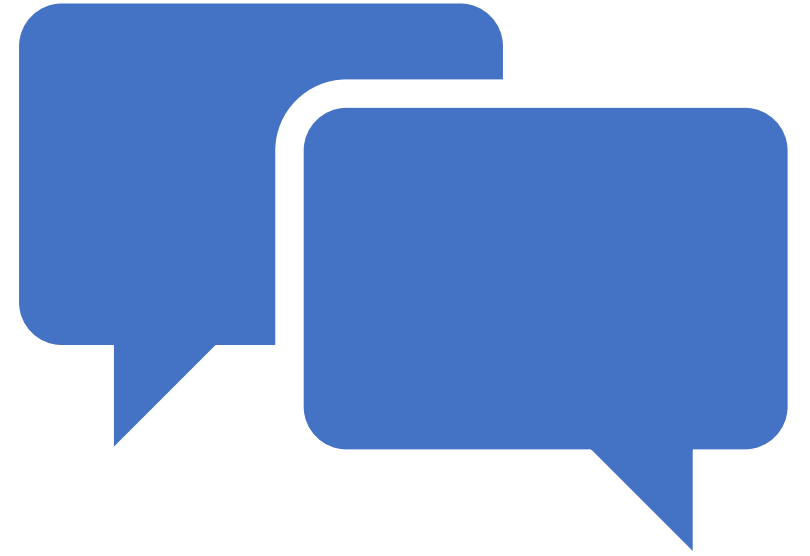
Demo: DisImpact

`1 - Calc DI and Export.R`

- Import student level data set: `student_equity` (provided by DisImpact)
- `di_iterate(…)`
- Export summarized data set: `di_summary.csv` and `di_summary.xlsx`

`2 - Dashboard - di_summary.xlsx`

- Emulate dashboard filtering to show data and visualization

Pause for Questions

Additional Resources

DisImpact Tutorial

https://cran.r-project.org/web/packages/DisImpact/vignettes/Tutorial.html

Scaling DI Calculations

https://cran.r-project.org/web/packages/DisImpact/vignettes/Scaling-DI-Calculations.html

(Google "DisImpact CRAN" -> 1st link (package site) -> vignette links)

Under active development

Bug fixes

Open to feedback and feature requests

Warning: changes and improvements will occur in subsequent versions

Contact maintainer: Vinh Nguyen

Additional Demonstrations

`3 - Additional Examples.R`

- PPG minus 1
- PPG: custom reference groups
- PI: threshold for DI
- 80% rule: threshold for DI
- 80% rule: custom reference groups
- Multiple PPG or DI parameter scenarios
- FERPA Block/Suppression

Sample Dashboards with Disaggregation

- Throughput Dashboard: monitoring the impact of AB 705

- Program Review Dashboard: how are individual programs doing?

- Others:
  - Grades by course
  - Grades by instructor
  - Statewide: success at different colleges

Thank you!

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