Writing Effective Learning Outcomes

Assessment

Measuring, analyzing, and improving student achievement of intended learning outcomes

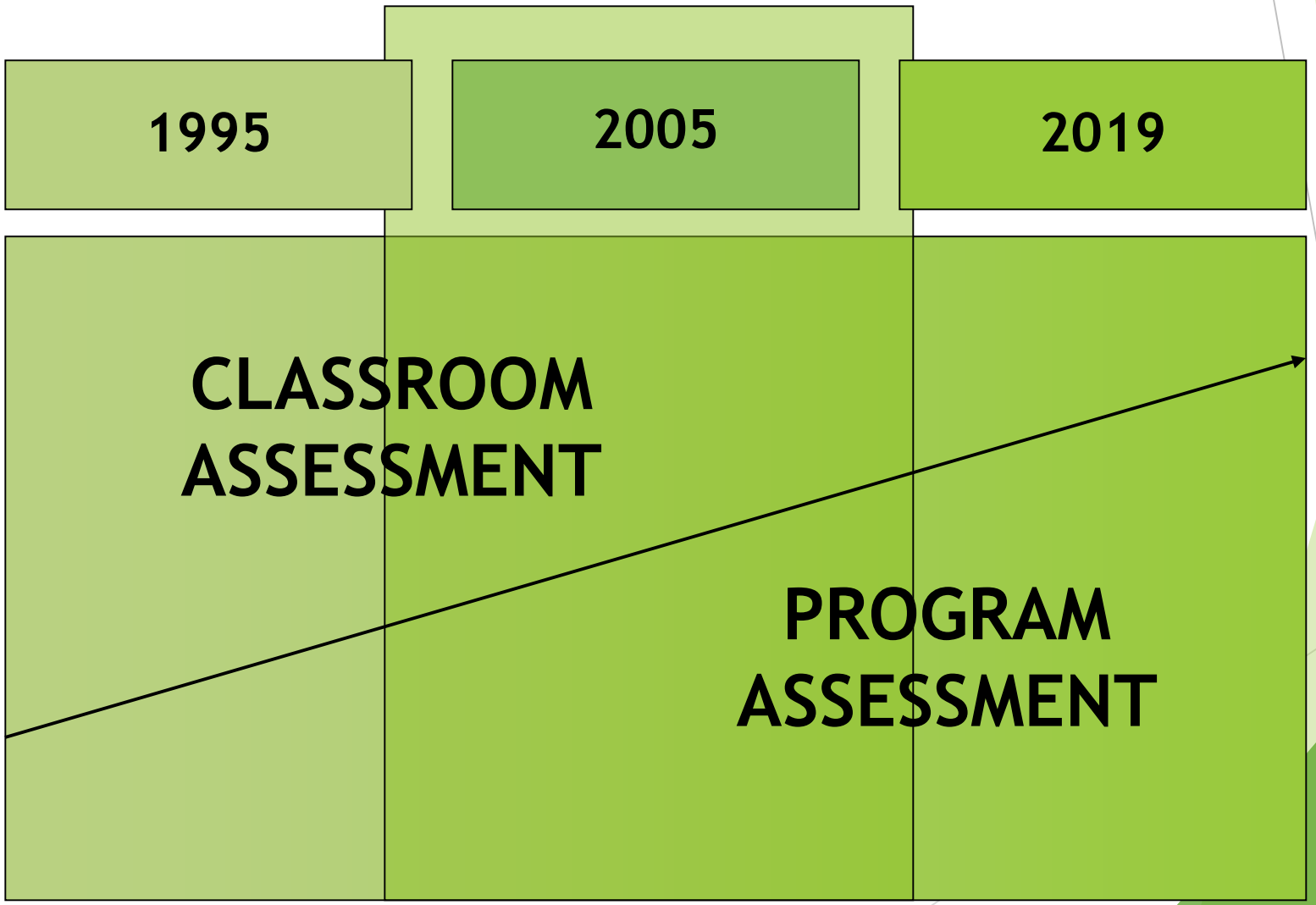
Assessment can be conducted…

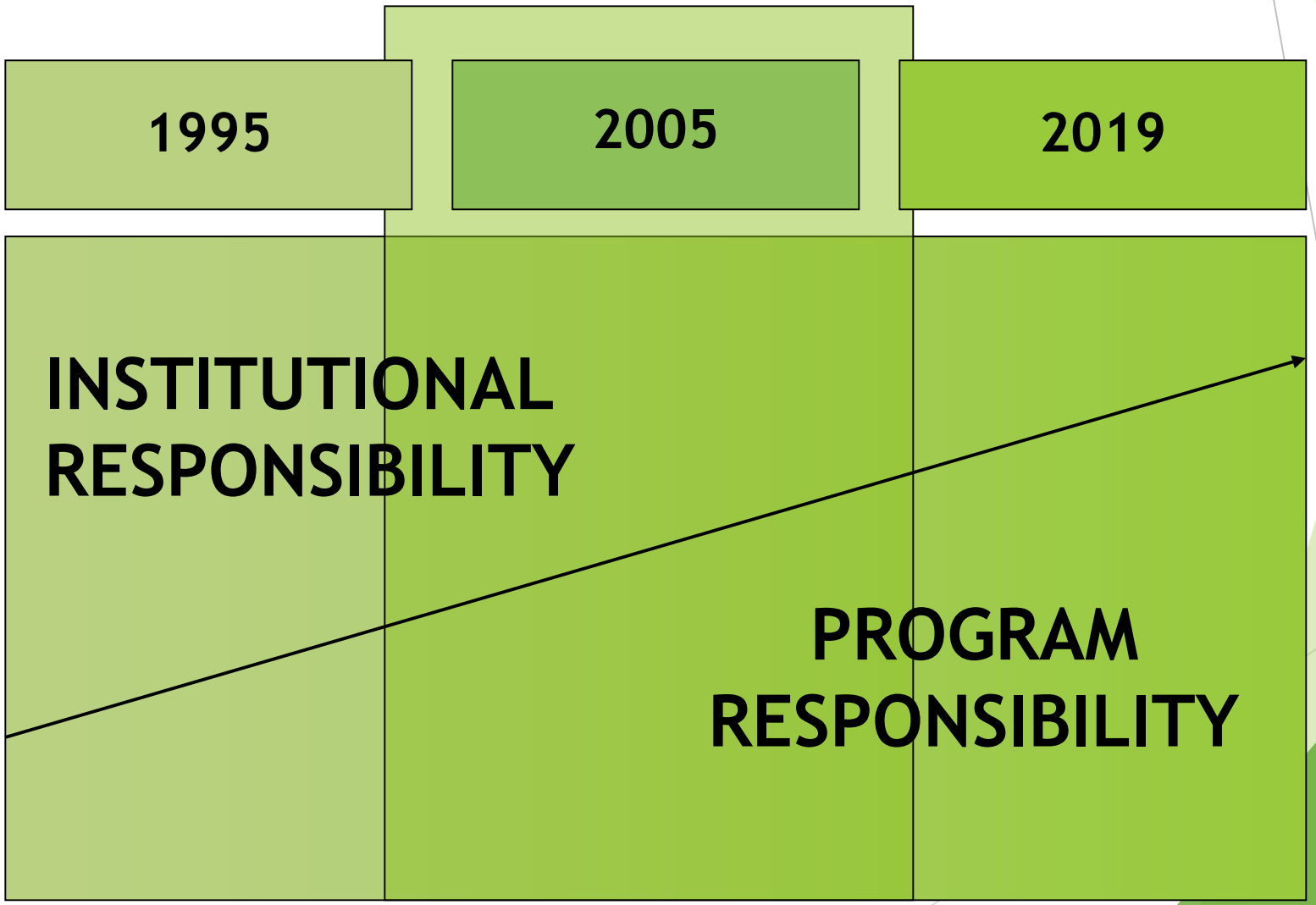
Institutional level

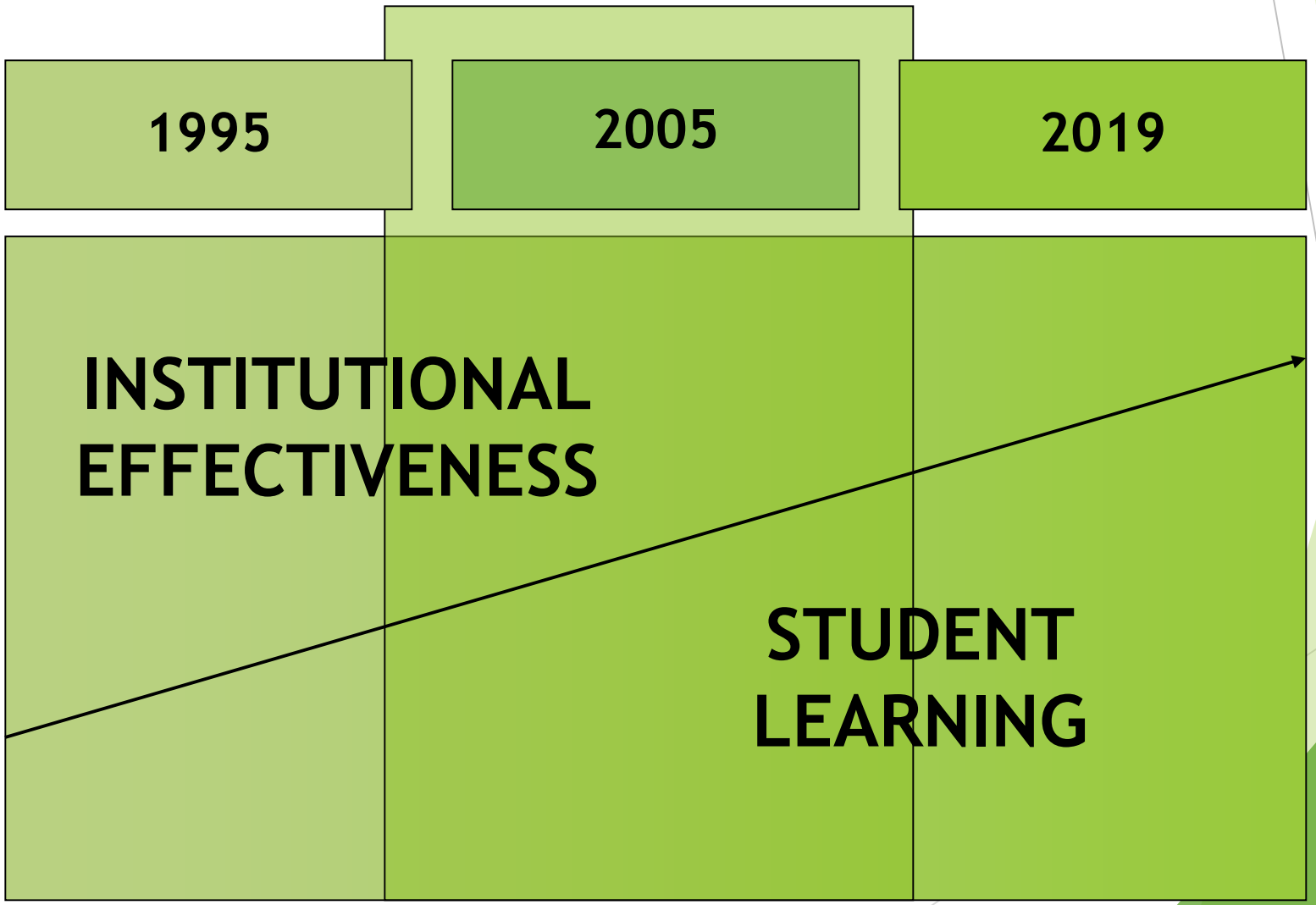
General Education

Program

Course


1995
2005
2019
CLASSROOM ASSESSMENT
PROGRAM ASSESSMENT


1995
2005
2019
INSTITUTIONAL RESPONSIBILITY
PROGRAM RESPONSIBILITY


1995
2005
2019
INSTITUTIONAL EFFECTIVENESS
STUDENT LEARNING

Today’s goals

- Confirm understanding of effective learning outcomes
- Discuss how outcomes are understood through “performance indicators”

Evaluation ~ Assessment

Evaluation

- Provides judgment on the performance
- Regards the performance as finished
- Common examples: SAT, ACT, other “secure” tests, end-of term grades.

Assessment

- Provides information about the relationship on performance to the intended goal/outcome
- Provides information students can use to improve performance
- Provides comment, insight coaching, corrective annotation, description of expected performance.

	Evaluation	Assessment
Quizzes	Count toward final grade	**Used to determine whether students understand**
Tests	Scored and returned	**Scored, tabulated, returned/discussed; adjustments made to syllabus**
Rubrics	Returned to students with grade	**Returned after being aggregated and analyzed; adjustments made to syllabus**

Learning Outcomes

Statements describing what students know, understand, and *can do* with their knowledge as a result of their experience in the program

Can be written for a course, a program, or an entire institution

Huba, M – Iowa State AAHE/HLC

Student Learning Outcomes

Learner-Centered

Specific

Action-oriented

Cognitively appropriate

Effective Course Outcomes…

- Build to program outcomes
- Are realistic
- Build in complexity over time
- Are linked to program design and outcomes

Effective Program Outcomes focus on…

- Critical but broad outcomes
- Knowledge/skills developed over time that increase in sophistication
- Integration of skills and knowledge
- What a graduate will be able to do upon completion of the degree program

Common Format

Students will be able to <<action verb>> <<something>>

KNOWLEDGE

Cite
Count
Define
Draw
Identify
List
Name
Point
Quote
Read
Recite
Record
Repeat
Select
State
Tabulate
Tell
Trace
Underline

COMPREHENSION

Associate
Classify
Compare
Compute
Contrast
Differentiate
Discuss
Distinguish
Estimate
Explain
Express
Extrapolate
Interpolate
Locate
Predict
Report
Restate
Review
Tell
Translate

APPLICATION

Apply
Calculate
Classify
Demonstrate
Determine
Dramatize
Employ
Examine
Illustrate
Interpret
Locate
Operate
Order
Practice
Report
Restructure
Schedule
Sketch
Solve
Translate
Use
Write

ANALYSIS

Analyze
Appraise
Calculate
Categorize
Classify
Compare
Debate
Diagram
Differentiate
Distinguish
Examine
Experiment
Inspect
Inventory
Question
Separate
Summarize
Test

SYNTHESIS

Arrange
Assemble
Collect
Compose
Construct
Create
Design
Formulate
Integrate
Manage
Organize
Plan
Prepare
Prescribe
Produce
Propose
Specify
Synthesize
Write

EVALUATION

Appraise
Assess
Choose
Compare
Criticize
Determine
Estimate
Evaluate
Grade
Judge
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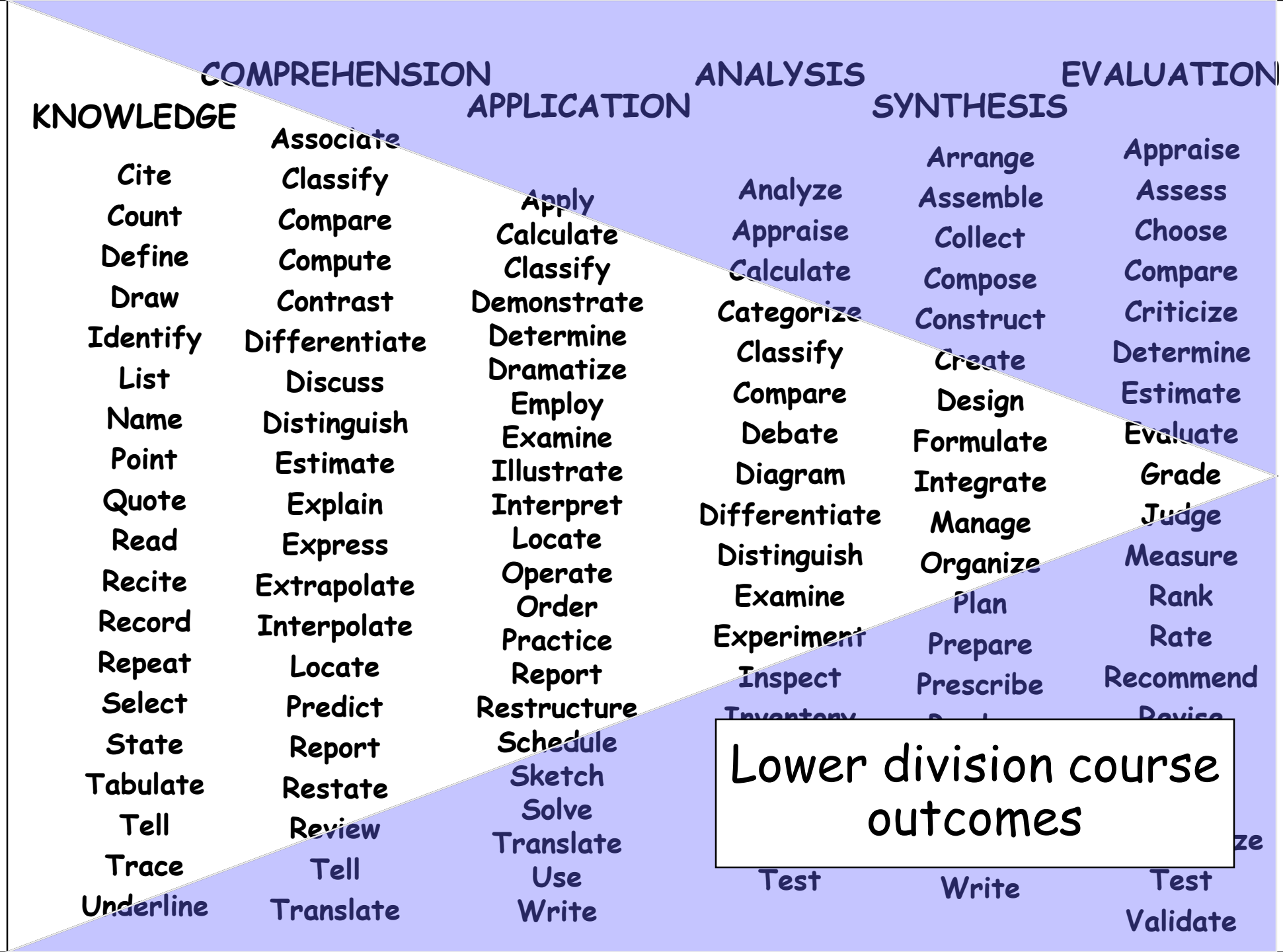
Rate
Recommend
Revise
Score
Select
Standardize
Test
Validate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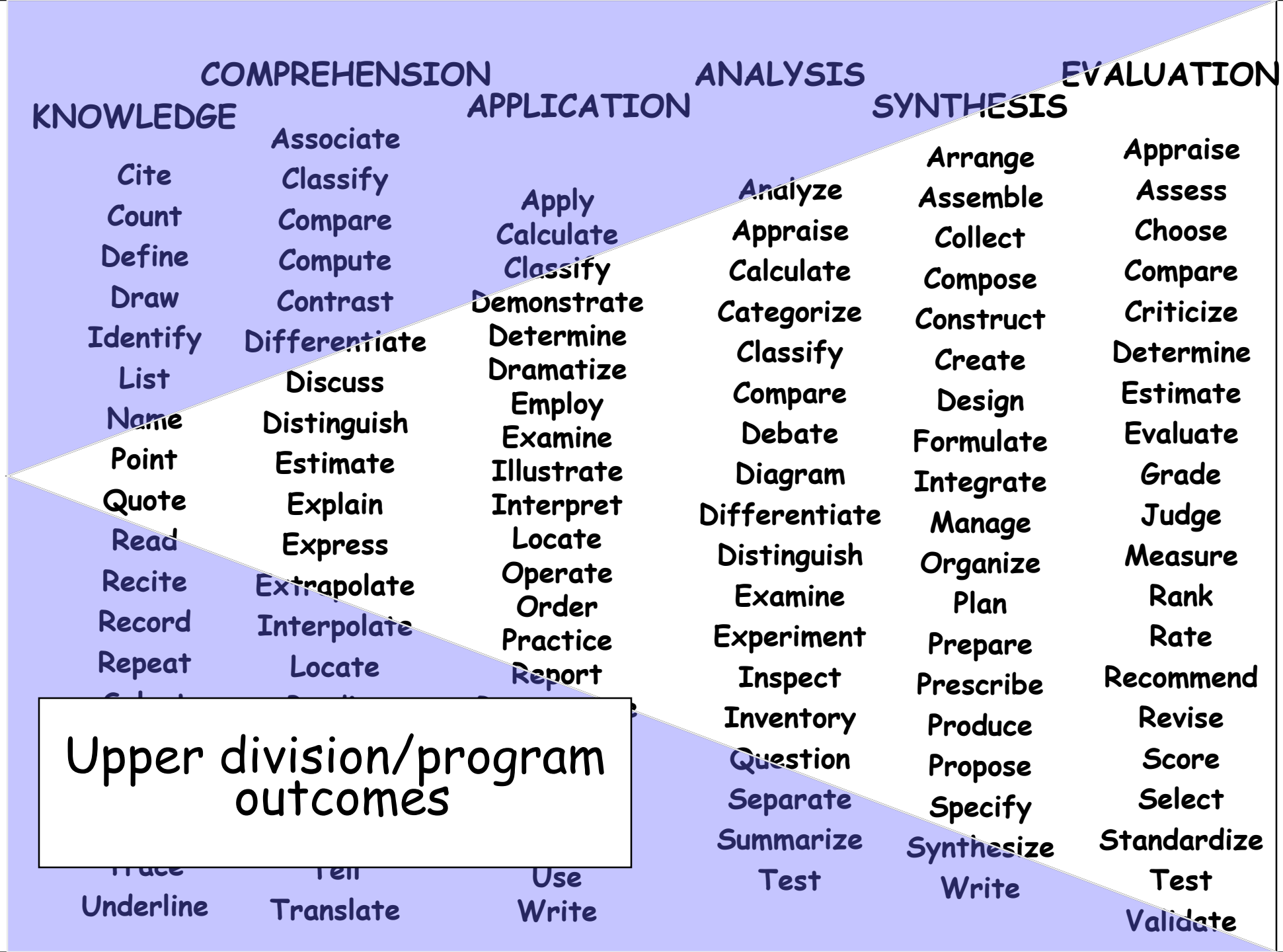
Test
Validate
Lower division course outcomes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Specify
Synthesize
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EVALUATION
Appraise
Assess
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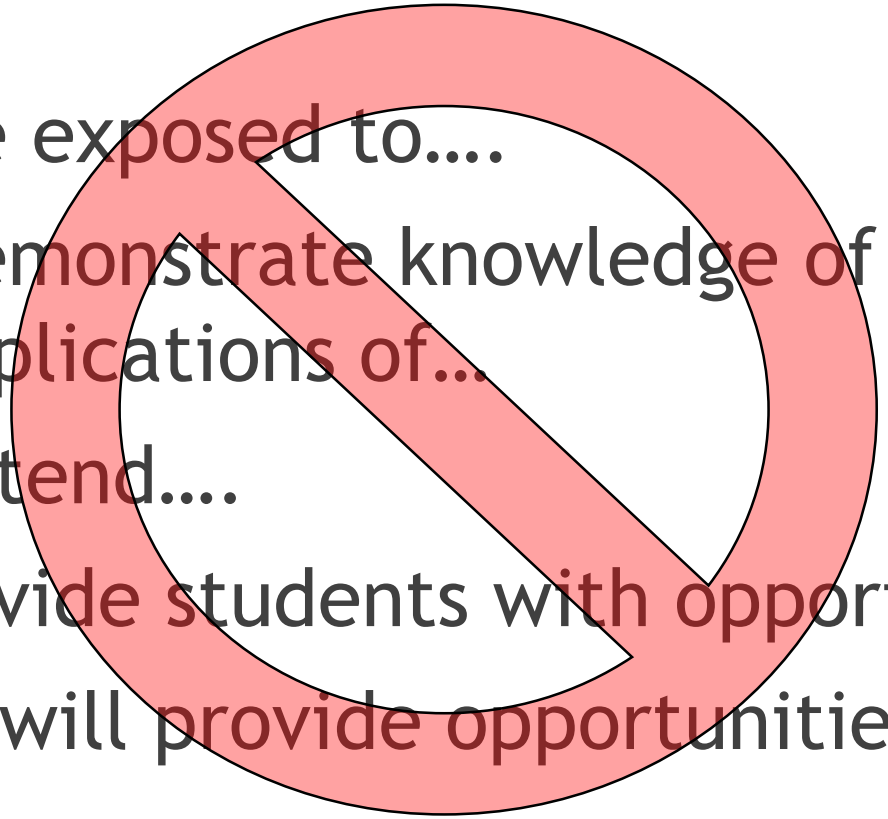
Compare
Criticize
Determine
Estimate
Evaluate
Grade
Judge
Measure
Rank
Rate
Recommend
Revise
Score
Select
Standardize
Test
Validate
Upper division/program outcomes

Viable learning outcomes?

- Students will be exposed to….
- Students will demonstrate knowledge of the history, theories and applications of…
- Students will attend….
- Faculty will provide students with opportunities to….
- The curriculum will provide experiences…..

Viable learning outcomes ?



- Students will be exposed to….
- Students will demonstrate knowledge of the history, theories and applications of…
- Students will attend….
- Faculty will provide students with opportunities to….
- The curriculum will provide opportunities…..

What about these…?

- Students will be able to lead within the structure of a team
- Students will reason using simplified economic models
- Students will differentiate between their personal values and the value system of others.

Huba, M – Iowa State AAHE/HLC

Students will be able to…

Critically comprehend, interpret, and evaluate written, visual, and aural material.

Students will be able to…

Recognize, analyze, and interpret human experience in terms of personal, intellectual, and social contexts.

Students will be able to…

Demonstrate the ability to solve problems, to work independently, and to work as members of a team.

Students will be able to…

Be recognized for excellent preparation and will be vigorously recruited by employers.

Students will be able to…

Map the motions of key celestial objects over time and analyze the patterns in these motions, use these to predict positions of the objects and describe their importance to various scientific traditions.

Students will be able to…

Adjust technique for non-routine situations.

Students will be able to…

Interpret data.

Students will be able to…

Gather, organize and present data visually, orally and mathematically.

Students will be able to…

Demonstrate how to troubleshoot technology related to the field.

Students will be able to…

Articulate the ethical standards of the profession.

Students will be able to…

Understand the cultural contributions of the arts.

Students will be able to…

Demonstrate professionalism required to succeed in business administrative capacities.

Students will be able to…

- Identify examples of how institutional racism has attempted to prevent multicultural peoples from succeeding in our society and also identify ways that all of us can deal with and overcome this historic trauma and/or protest against continued acts of oppression through decolonization and a variety of creative expressions in order to succeed in our own lives.

Students will be able to…

Produce diagnostic quality radiographic images.

Students will be able to…

Demonstrate skills in network infrastructure and servers as it relates to the industry.

Students will be able to…

Evaluate the advantages of alternative solutions.

Students will be able to…

Create a web page.

Students will be able to…

Create works of art in a medium of their choice.

Students will be able to…

Use statistical skills in professional research.

Students will be able To…

Adapt communication style for different situations.

Students will be able to…

Consistently value clients' opinions and experiences.

Students will be able to…

Use statistical software.

Students will be able to

- Develop professional attitudes and habits of punctuality, honesty, respect, accountability, leadership, professional and personal integrity, and self-directedness while contributing to personal and group goals.

Students will be able to…

Articulate the advantages and disadvantages of treatment protocols.

Students will be able to…

Explain procedures to a patient.

Students will be able to…

Troubleshoot an equipment failure.

Students will be able to…

Appropriately use the professional vocabulary of the field.

Students will be able to…

Define the major factors that could potentially contribute to system failure.

Students will be able to…

Write a business plan.

Students will be able to…

Design a solution to a technical problem.

Students will be able to…

Interpret performance data.

Students will be able to…

Demonstrate a basic knowledge of human anatomy.

Students will be able to…

Students will be able to define 200 medical terms.

Students will be able to…

Know the history of Belize.

Students will be able to…

Convert dollars into Euros.

Consider…

If you have more than one action verb---keep the one that represents the highest order of thinking.

Students will be able to define, explain and **evaluate……**

Students will be able to describe, analyze and **interpret**…..

Keep in mind that outcomes should be

Meaningful….

Measurable….

Manageable….

Outcomes need to be defined…

Performance Indicators

components…elements…features…
competencies…characteristics…traits

Provide a common language for describing student learning

Are *outcome specific*

Work best when shared across faculty

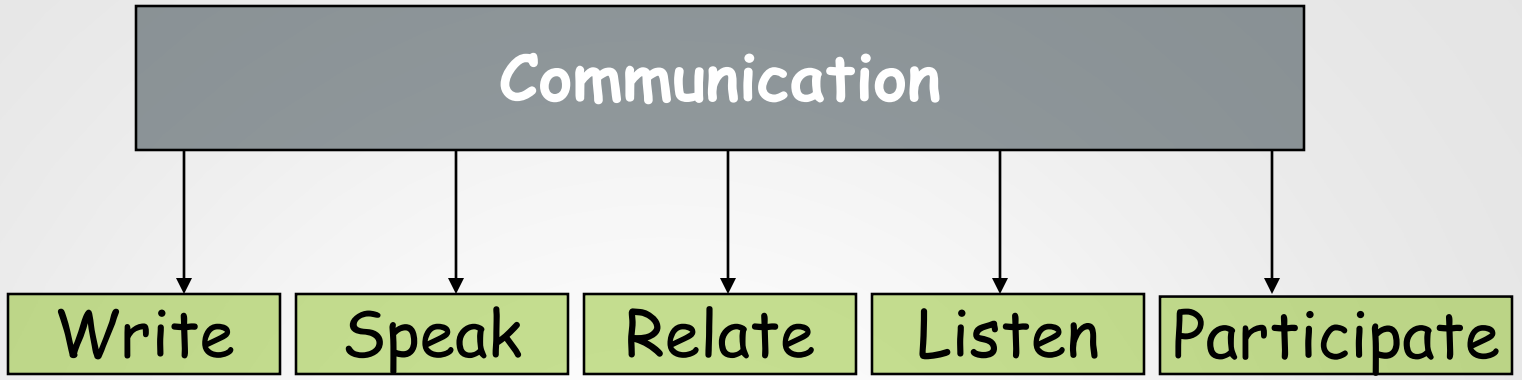
Performance indicators…answer the questions

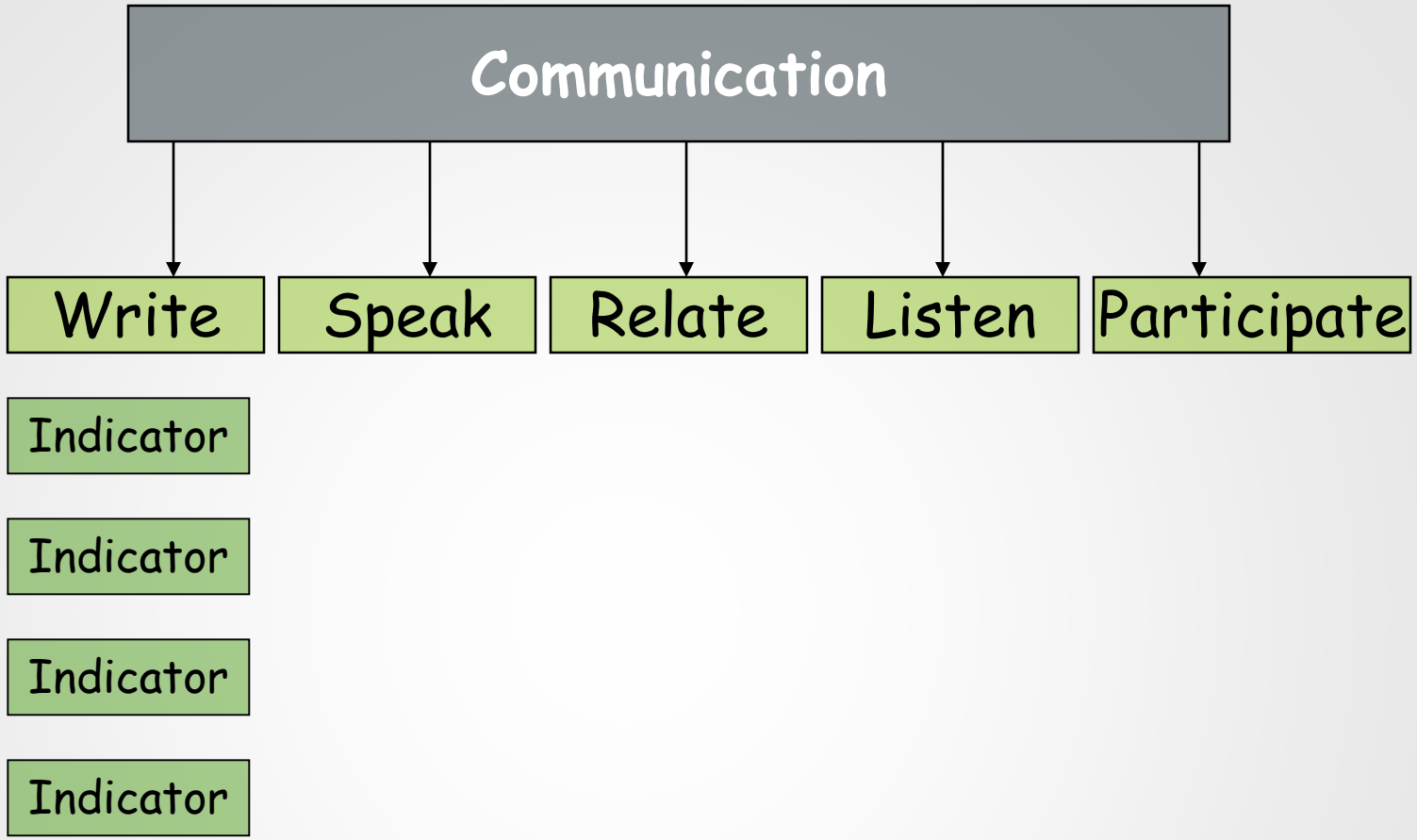
What would successful accomplishment of the outcome look like?

How would you know that students have achieved the outcome?

…..They should relate easily to grading criteria

And are specific to the outcome...not the assignment


Communication
Write
Speak
Relate
Listen
Participate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Participate
Indicator
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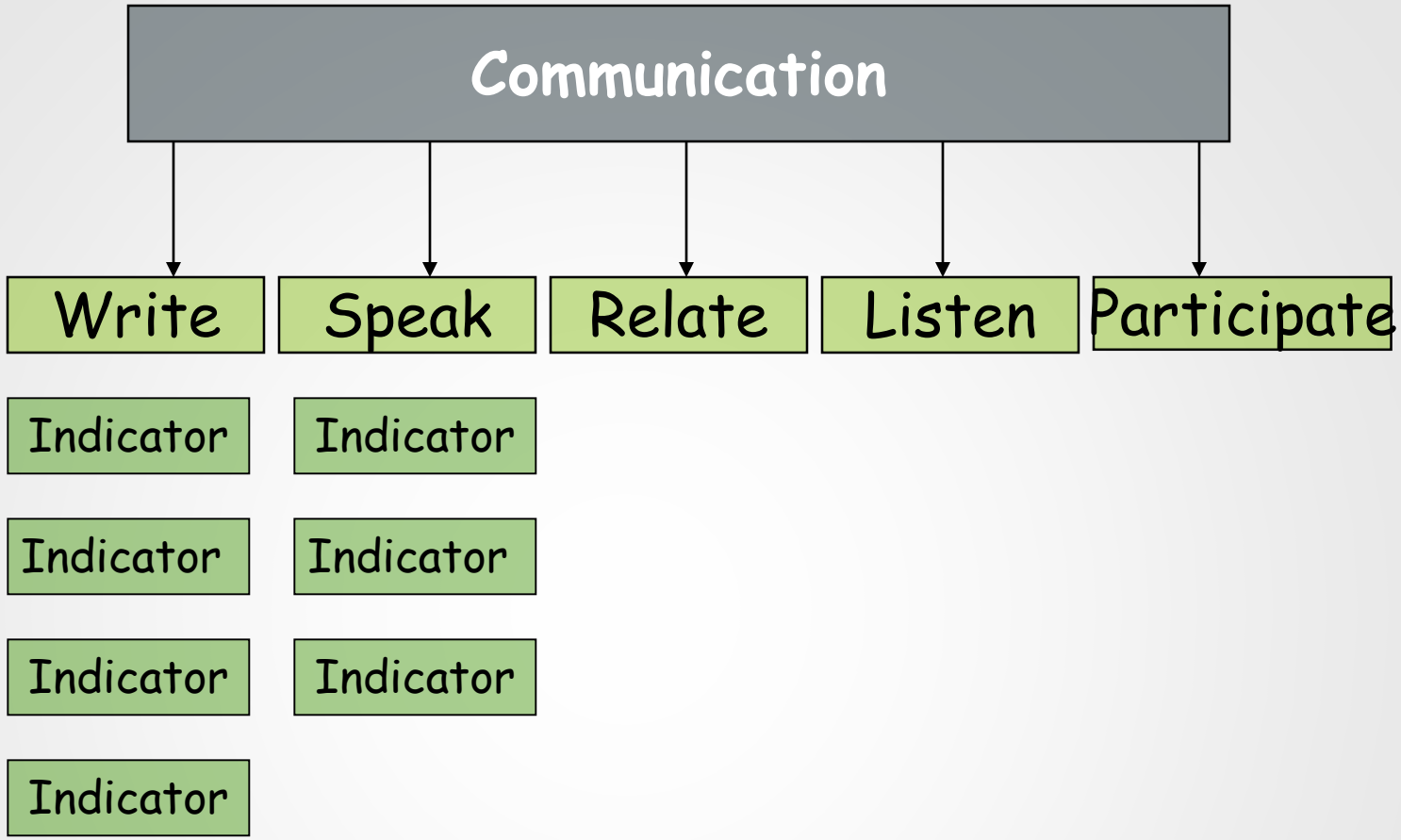
Communication
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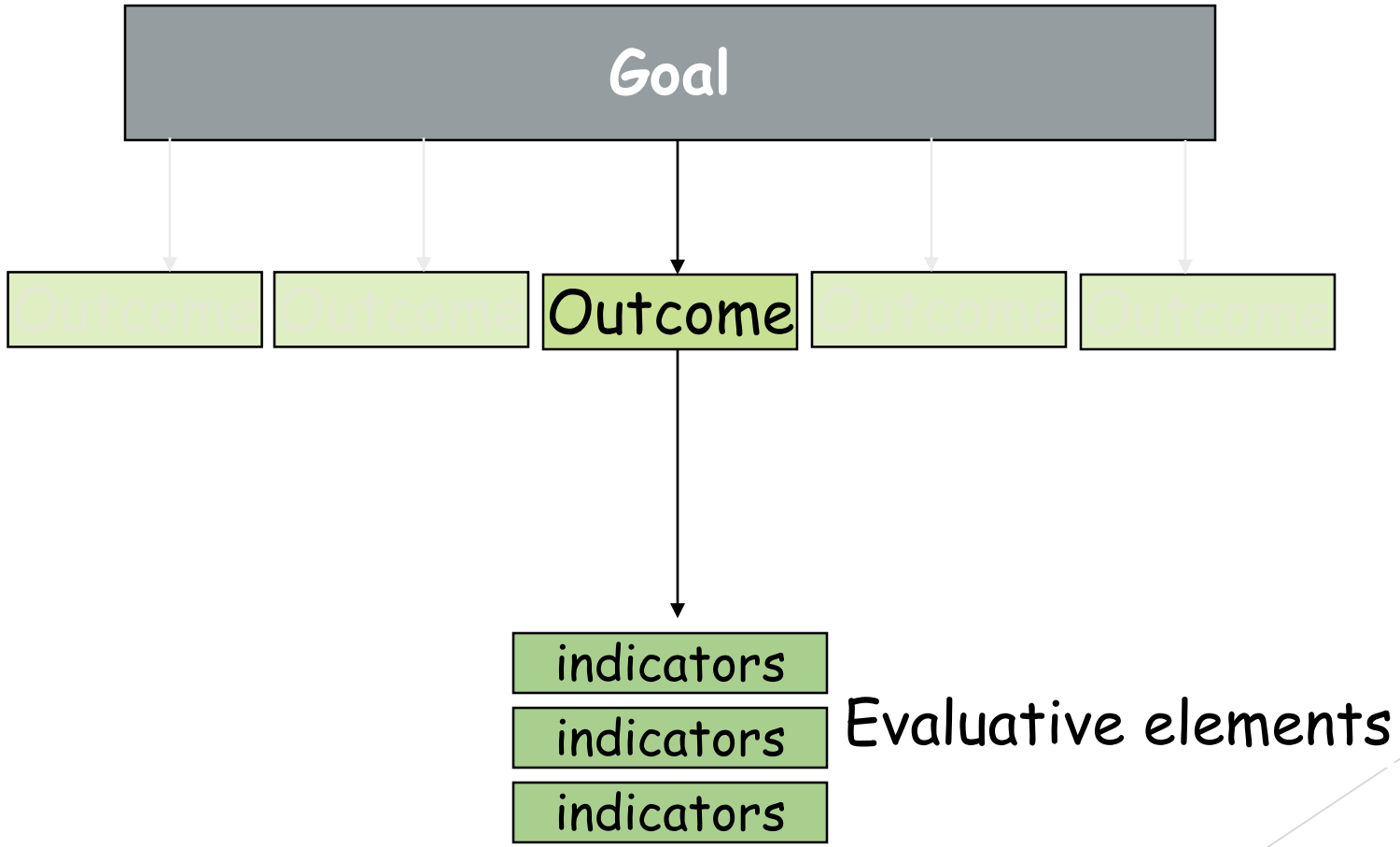
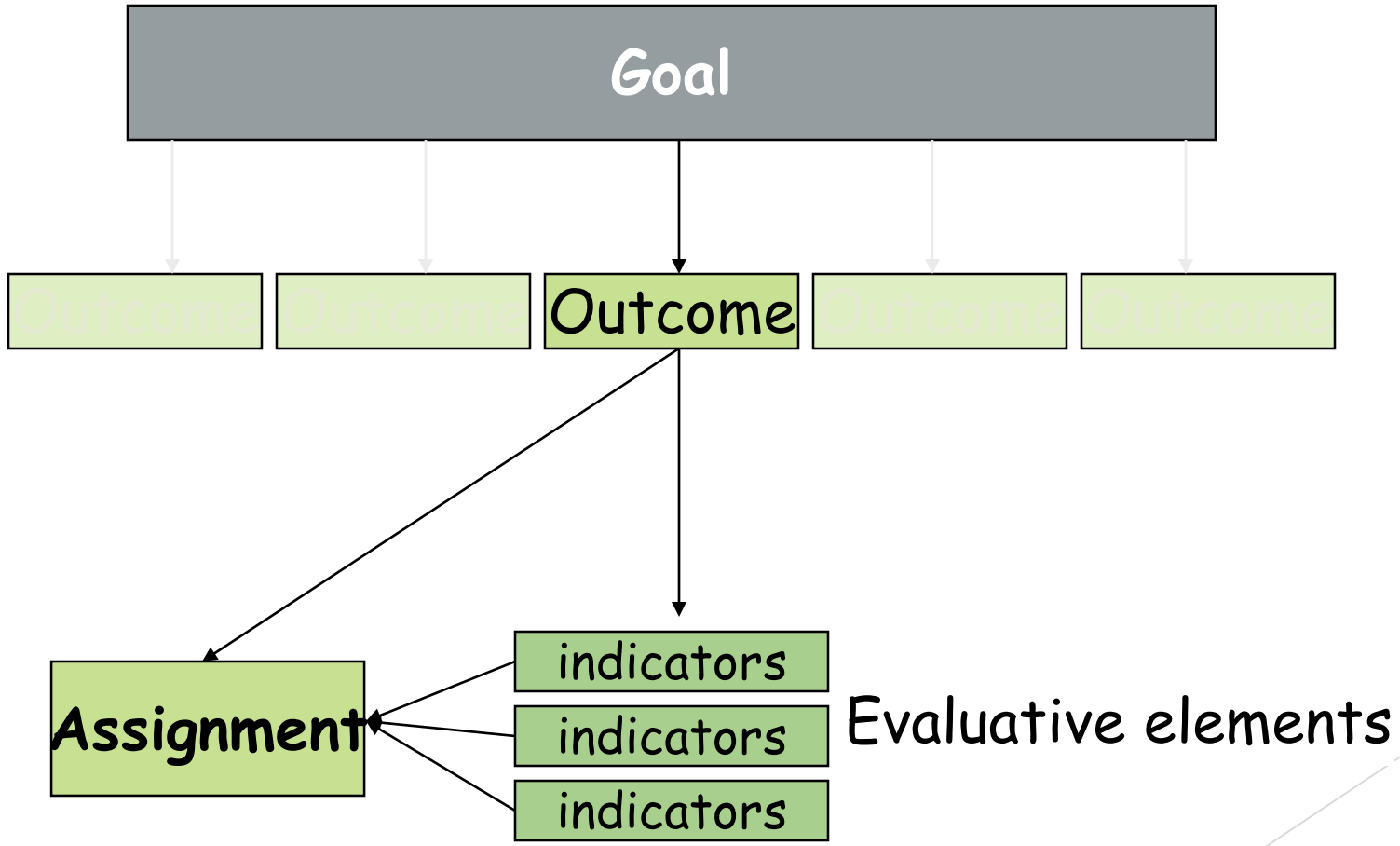

Goal
Outcome
Outcome
Outcome
Outcome
Outcome
indicators
indicators
indicators
Evaluative elements


Goal
Outcome
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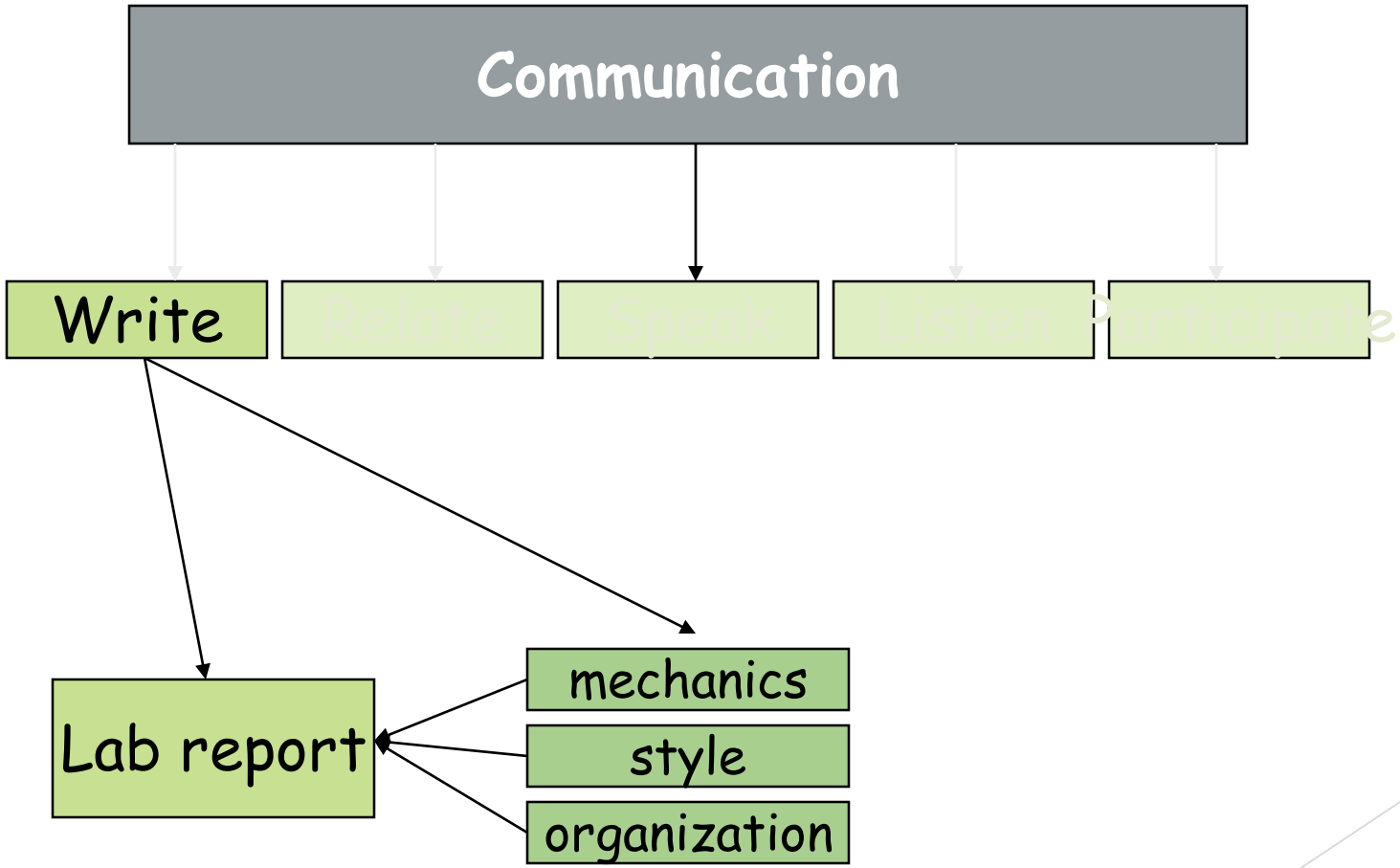
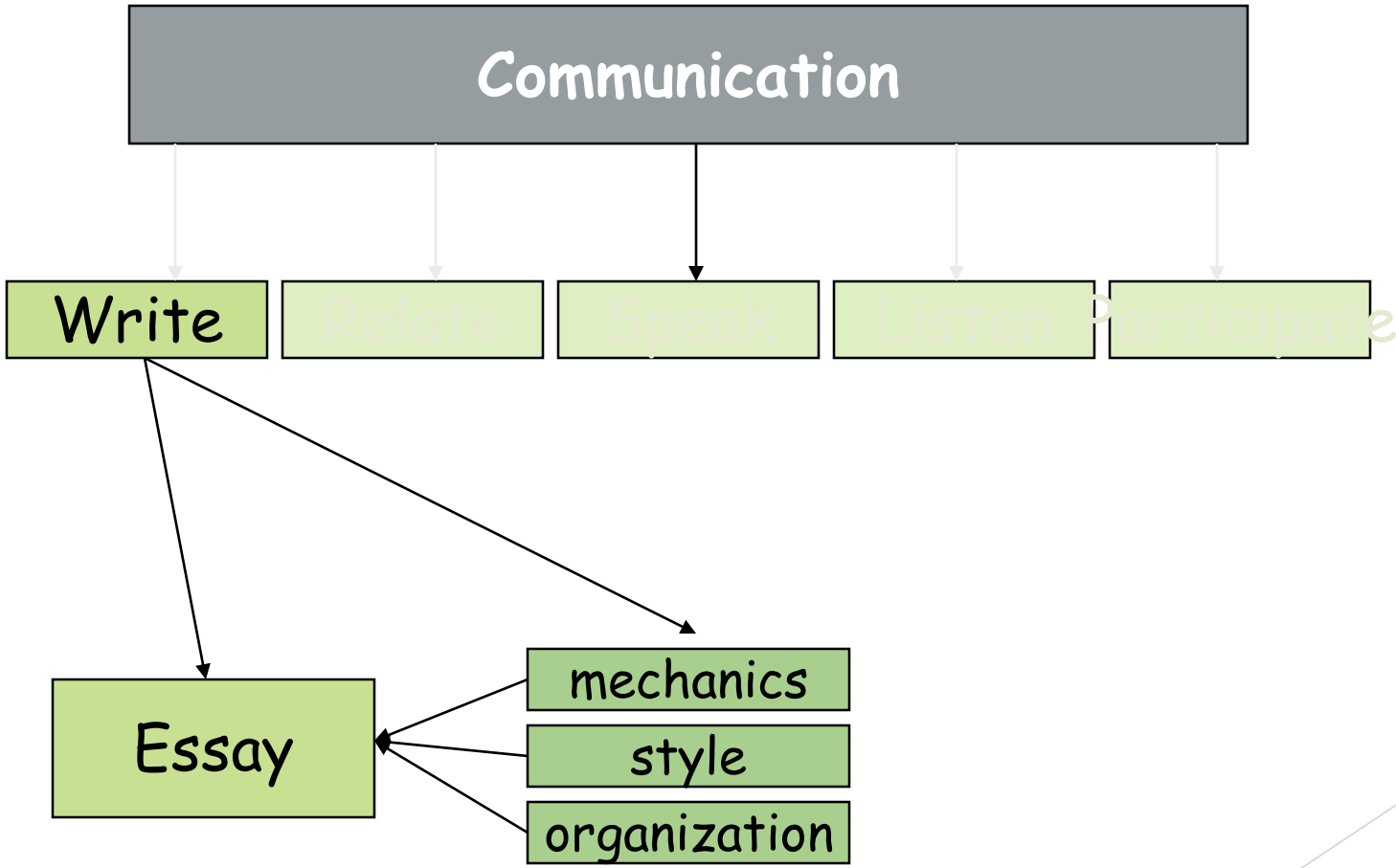
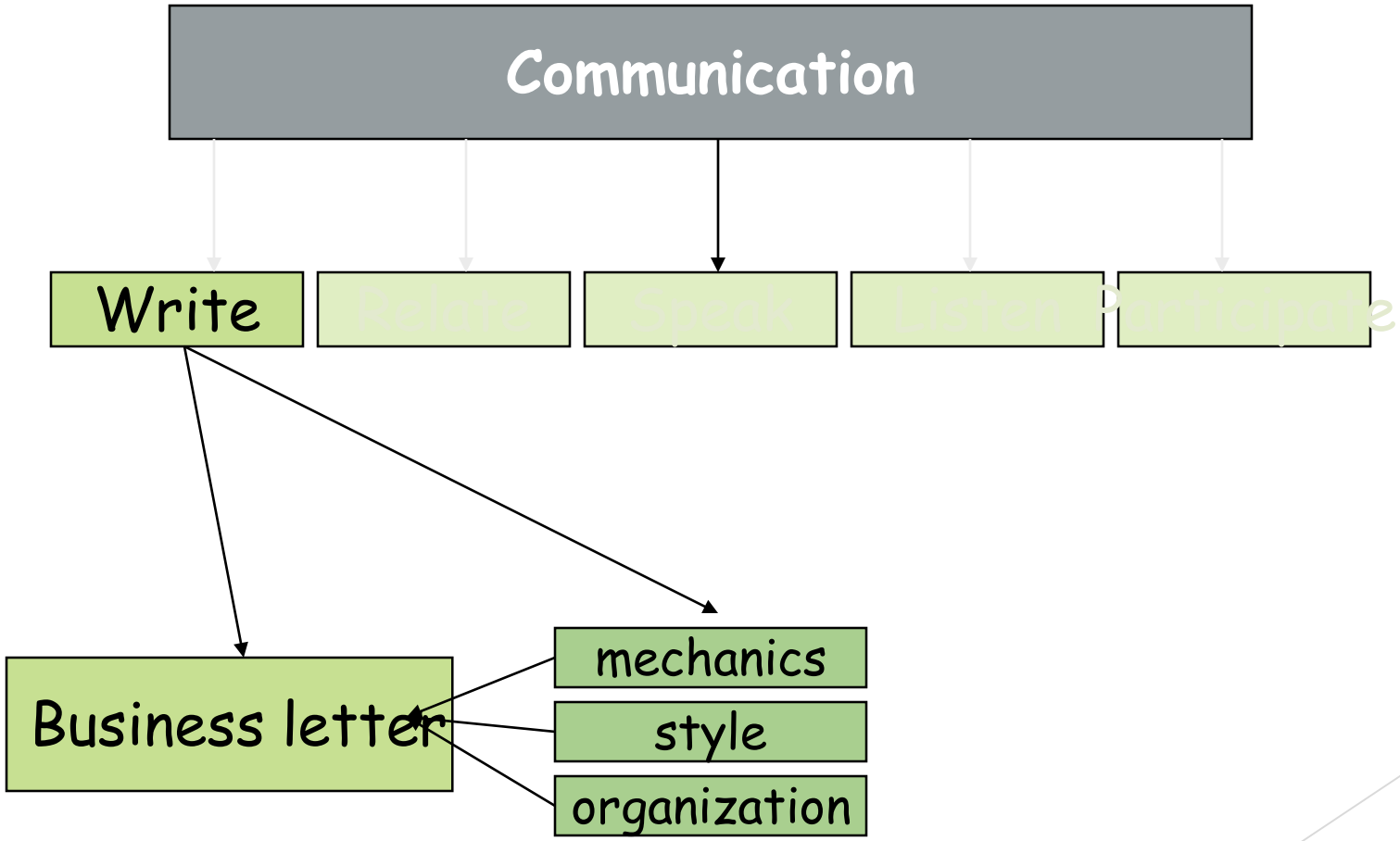
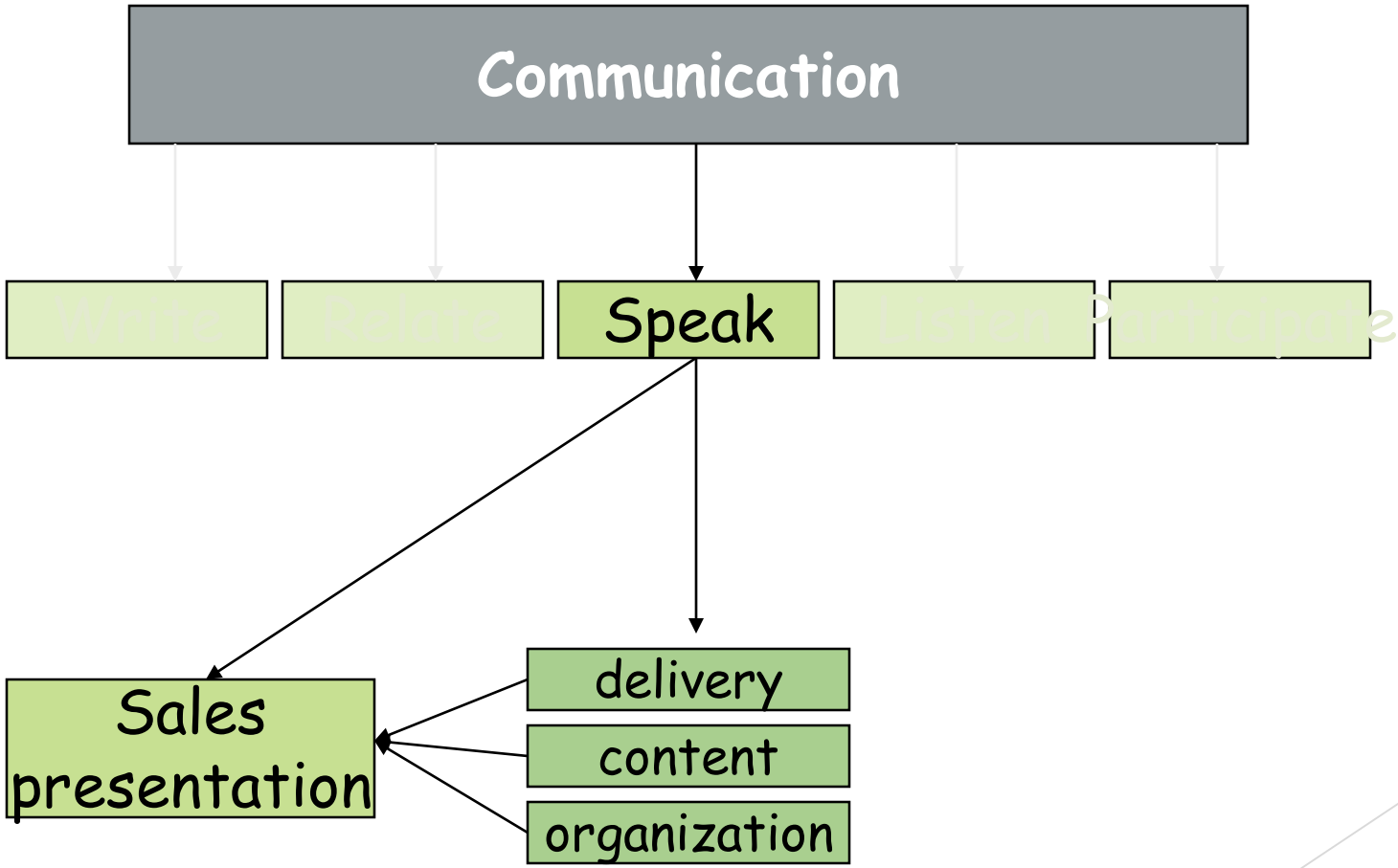
Outcome
Outcome
Outcome
Assignment
indicators
indicators
indicators
Evaluative elements


Communication
Write
Relate
Speak
Listen
Participate
Lab report
mechanics
style
organization


Communication
Write
Relate
Speak
Listen
Participate
Essay
mechanics
style
organization


Communication
Write
Relate
Speak
Listen
Participate
Business letter
mechanics
style
organization


Communication
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Participate
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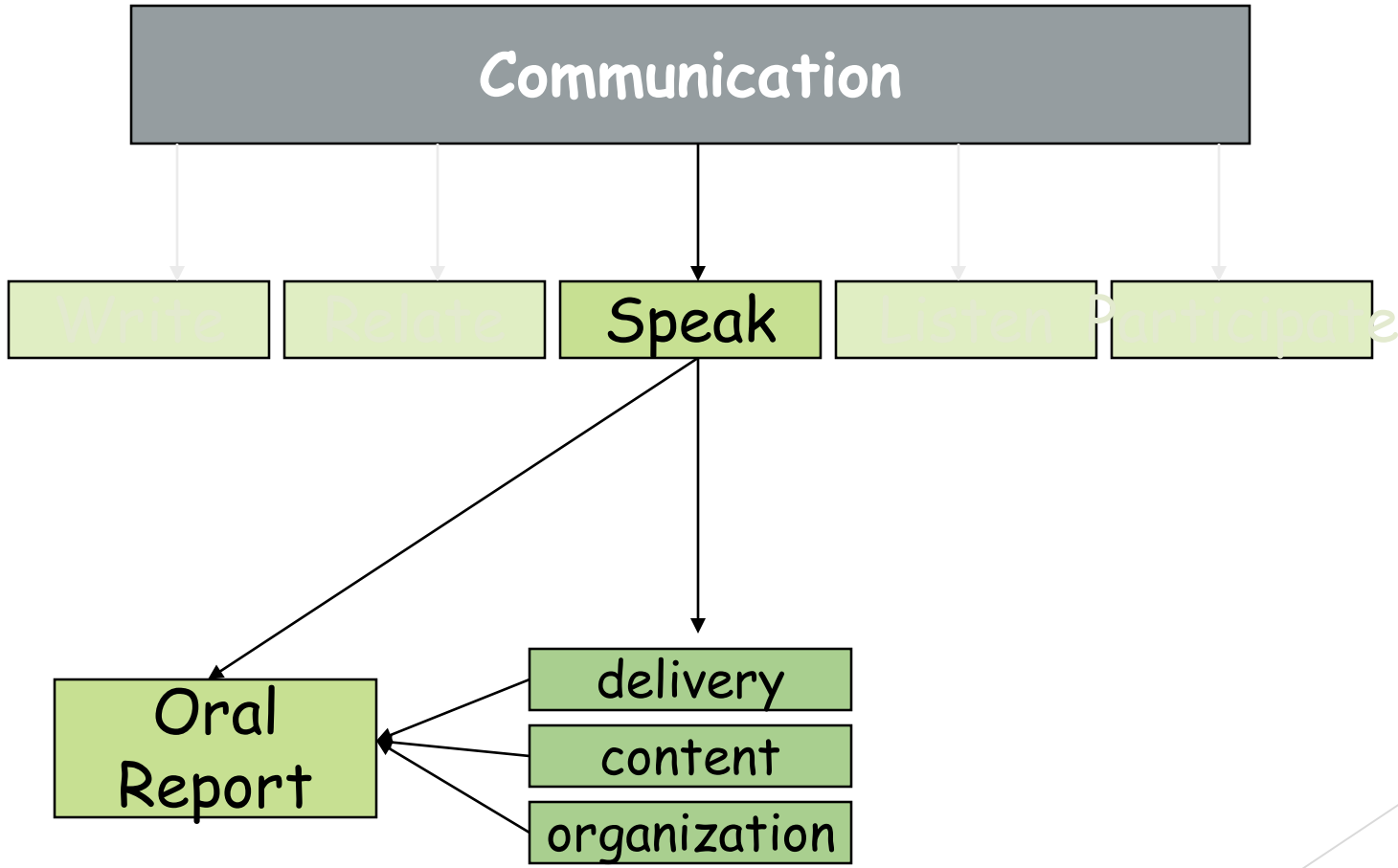
Communication
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Participate
Oral Report
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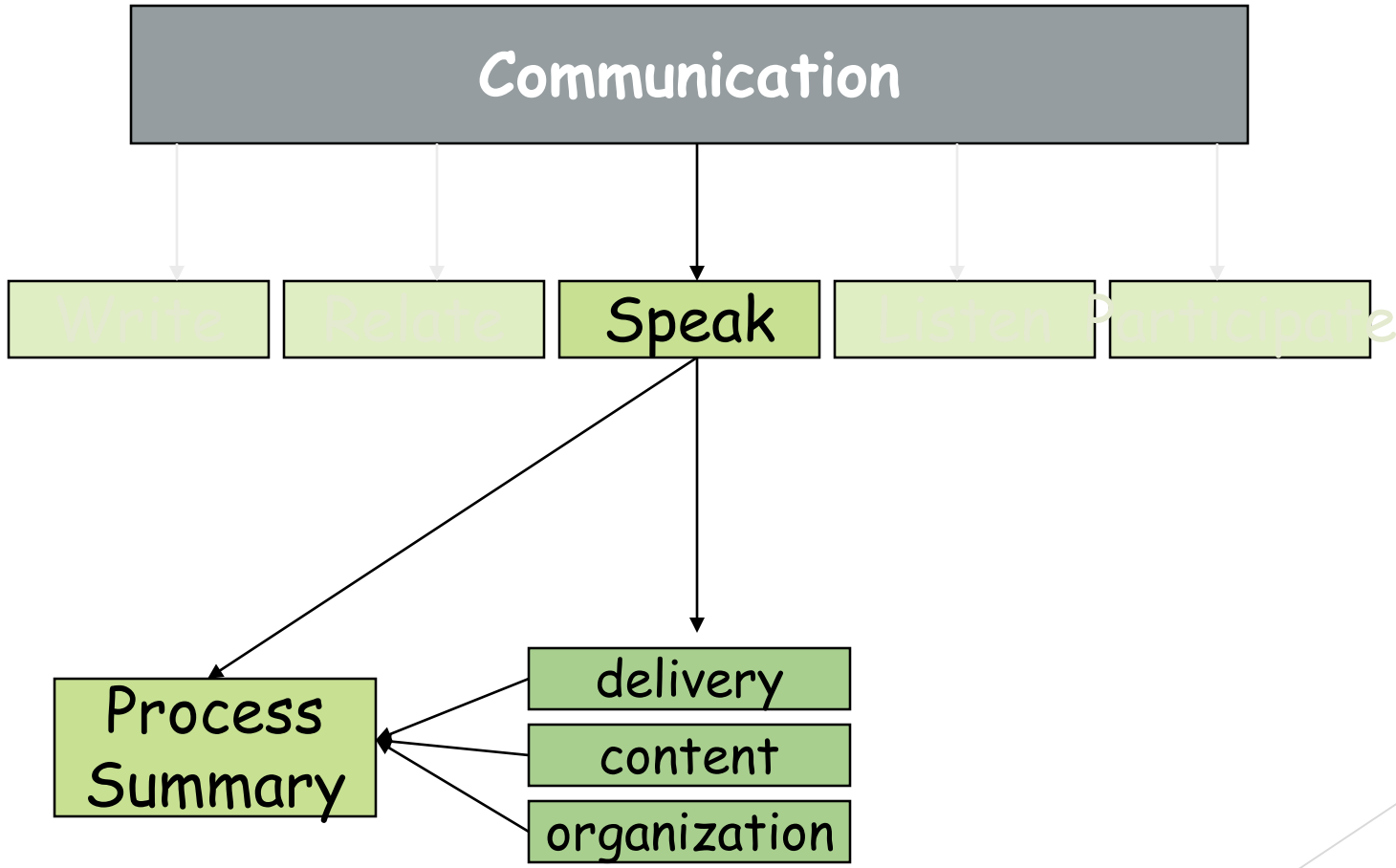
organization


Communication
Write
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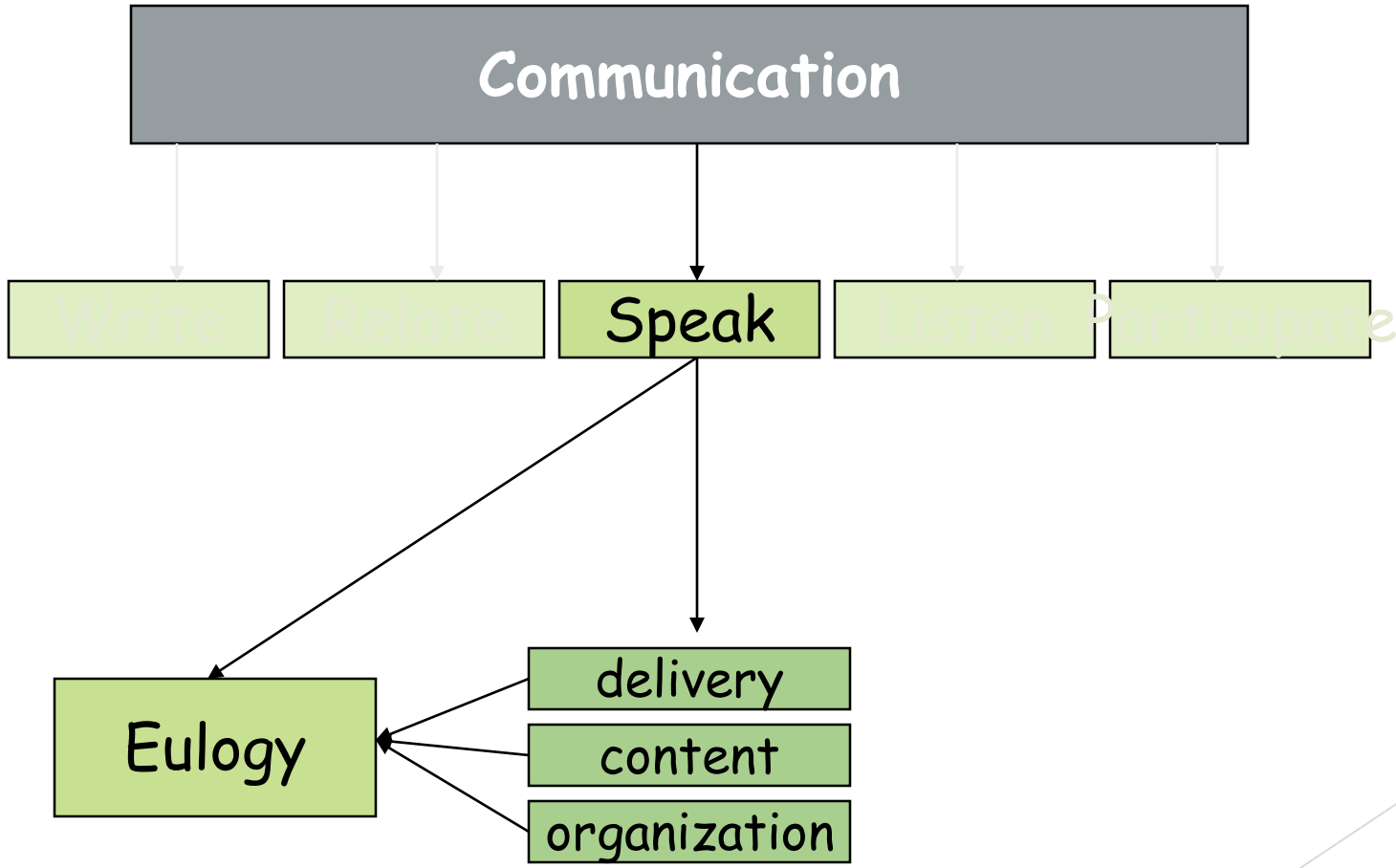
Listen
Participate
Process Summary
delivery
content
organization


Communication
Write
Relate
Speak
Listen
Participate
Eulogy
delivery
content
organization

Assignments

Standardized Exam, abstract, advertisement, annotated bibliography, biography, briefing, brochure, budget, care plan, case analysis, chart, cognitive map, court brief, debate, definition, description, diagram, dialogue, diary, essay, executive summary, exam, flow chart, group discussion, instruction manual, inventory, lab notes, letter to the editor, matching test, mathematical problem, memo, micro theme, multiple choice test, narrative, news story, notes, oral report, outline, performance review, plan, precis, presentation, process analysis, proposal, regulation, research proposal, review of literature, taxonomy, technical report, term paper, thesis, word problem, work of art. (Walvoord Anderson 1998).

Practical Advice

If you're having a hard time identifying "indicators" for your outcome…

you need to rethink the outcome statement.

Example indicators…components…traits

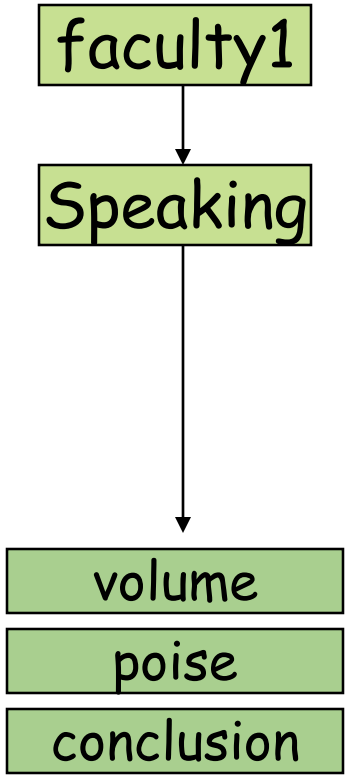
- Organization
- Complexity of ideas
- Support for ideas
- Coherence of presentation
- Awareness of audience
- Mechanics
- Appropriateness
- Analysis
- Layout

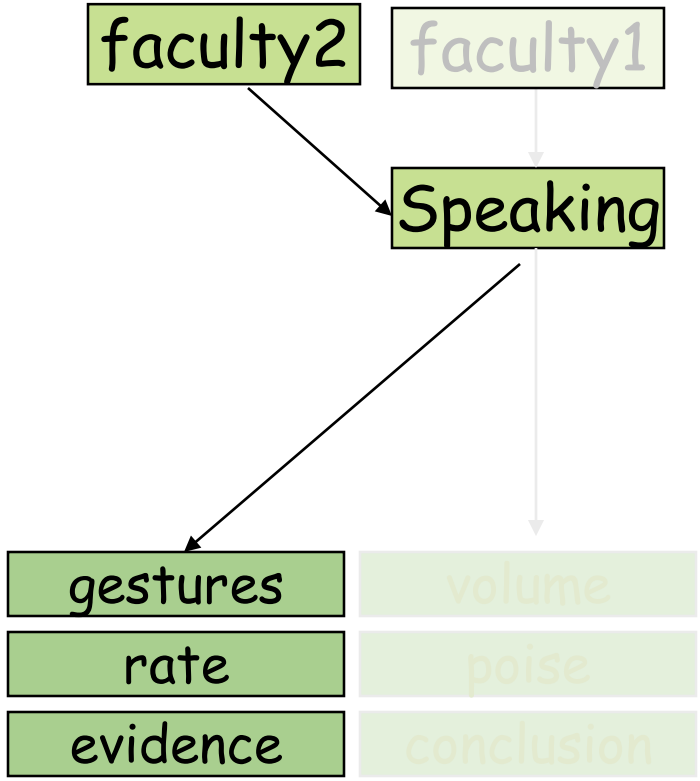
How not to complicate measuring …

OR

Why you need common "indicators"

faculty1


faculty1
Speaking
volume
poise
conclusion


faculty2
faculty1
Speaking
gestures
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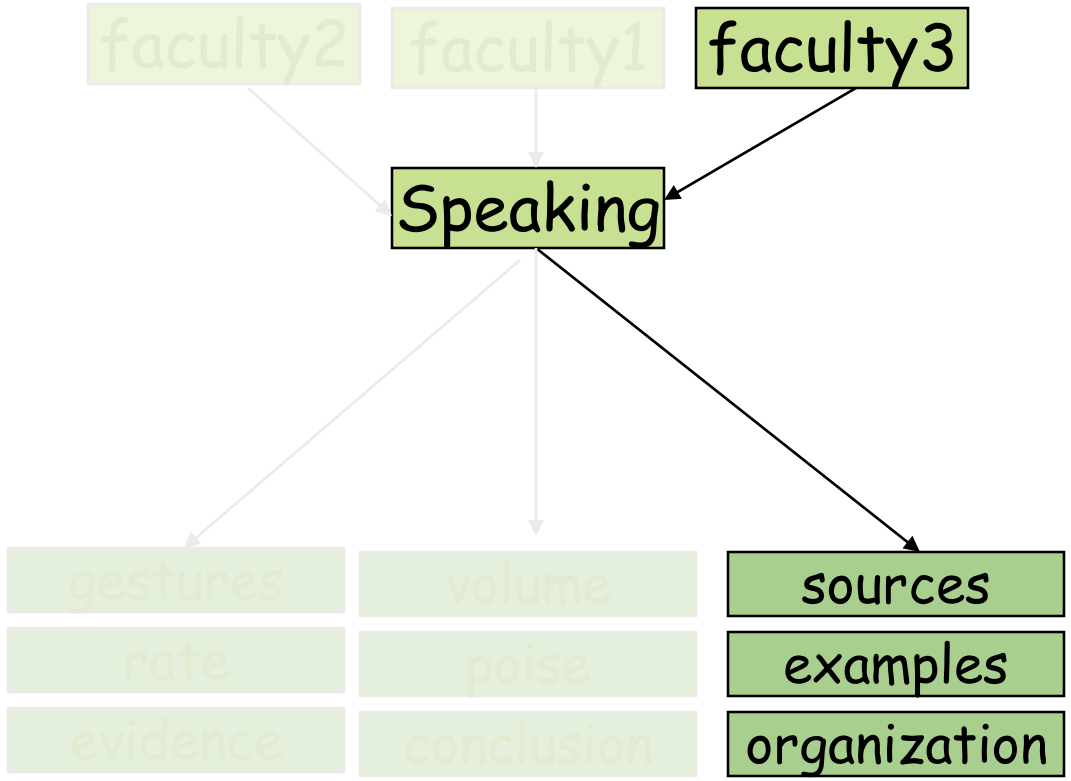
faculty2
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Speaking
gestures
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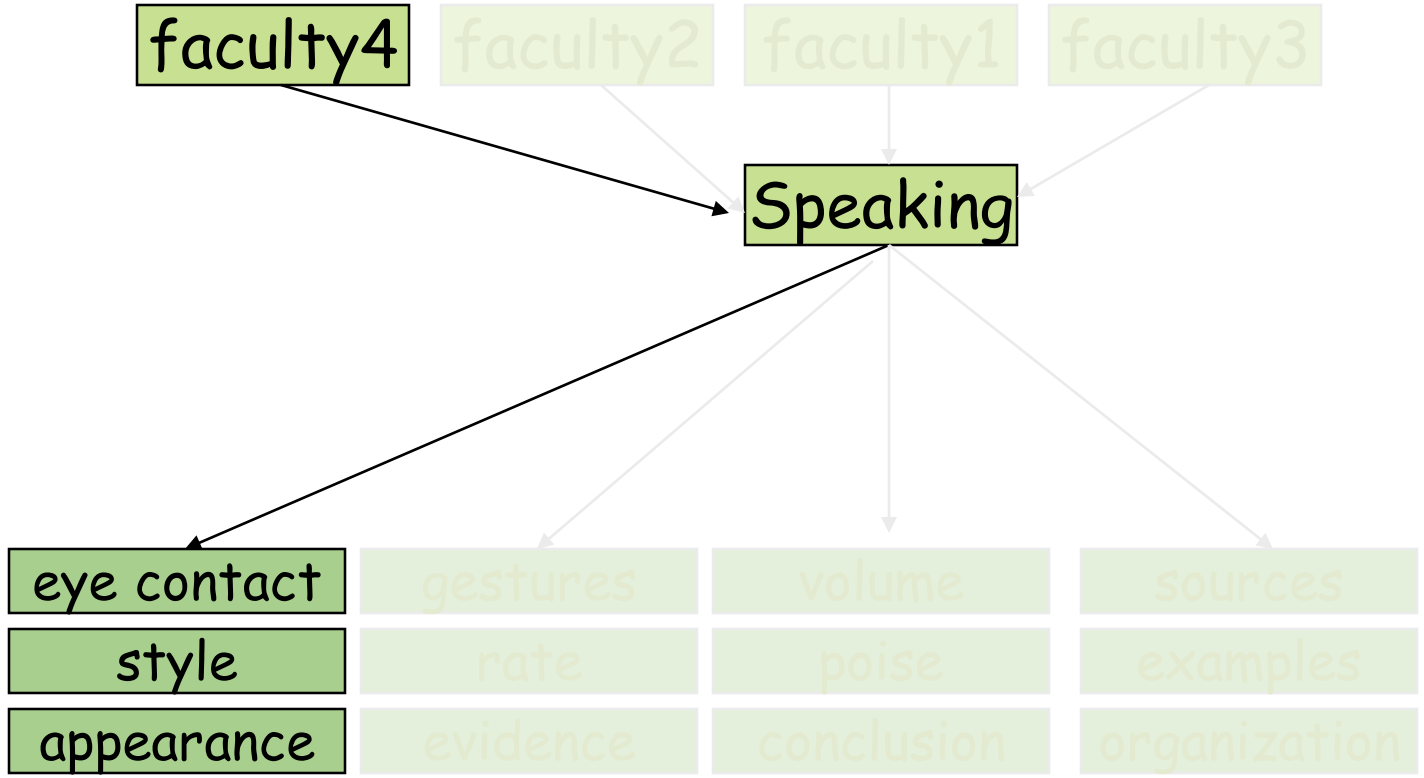
faculty4
faculty2
faculty1
faculty3
Speaking
eye contact
style
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gestures
volume
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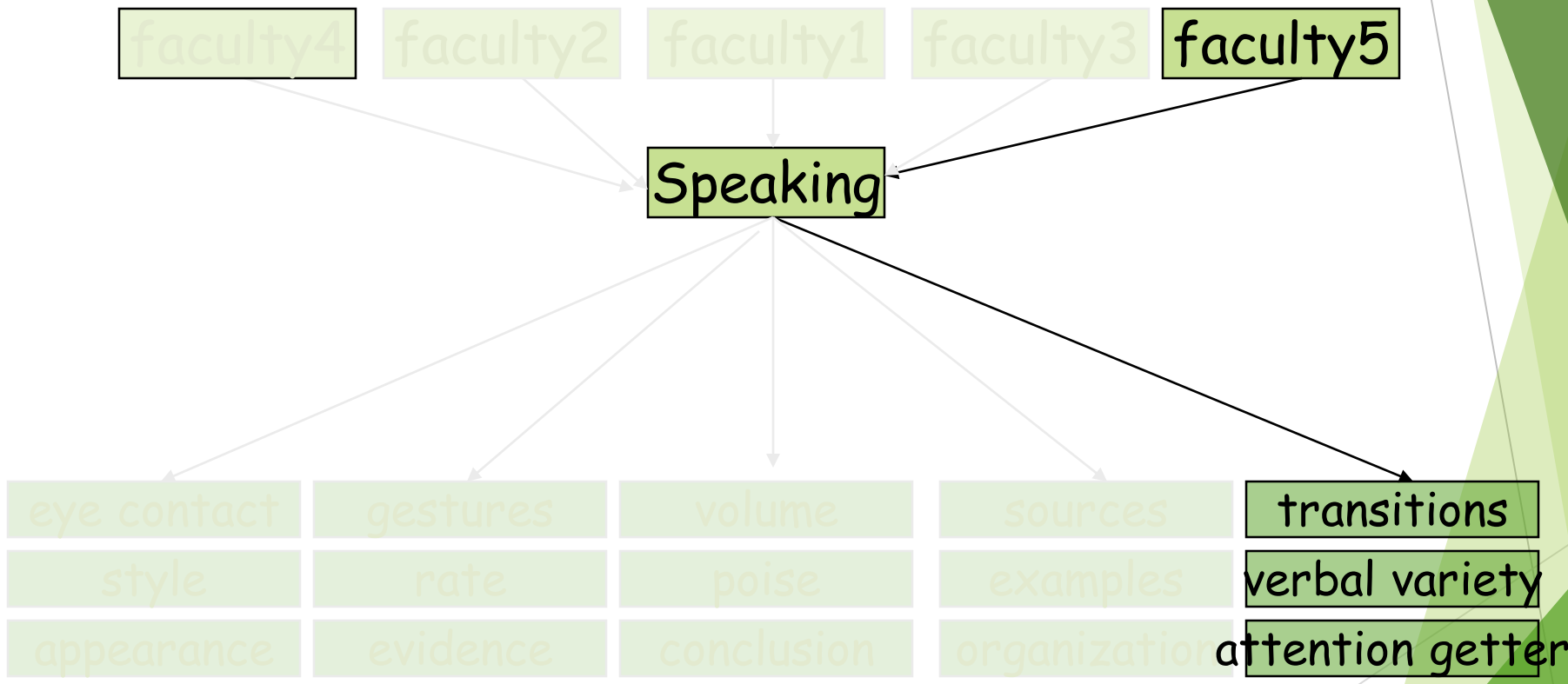
conclusion
organization


faculty4
faculty2
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faculty5
Speaking
eye contact
gestures
volume
sources
transitions
style
rate
poise
examples
verbal variety
appearance
evidence
conclusion
organization
attention getter

Can our students deliver an effective Public Speech?

eye contact	gestures	volume	sources	transitions
style	rate	poise	examples	verbal variety
appearance	evidence	conclusion	organization	attention getter

Example #1

Gather factual information and apply it to a given problem in a manner that is relevant, clear, comprehensive, and conscious of possible bias in the information selected

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BETTER: Students will be able to apply factual information to a problem

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Gather factual information and apply it to a given problem in a manner that is relevant, clear, comprehensive, and conscious of possible bias in the information selected

BETTER: Students will be able to apply factual information to a problem

Indicators:

- Relevance
- Clarity
- Comprehensiveness
- Aware of Bias

Example #2

Imagine and seek out a variety of possible goals, assumptions, interpretations, or perspectives which can give alternative meanings or solutions to given situations or problems

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BETTER: Students will be able to provide alternative solutions to situations or problems

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Imagine and seek out a variety of possible goals, assumptions, interpretations, or perspectives which can give alternative meanings or solutions to given situations or problems

BETTER: Students will be able to provide alternative solutions to situations or problems

Indicators:

- Variety of assumptions
- Perspectives
- Interpretations
- Analysis of comparative advantage

Example #3

Formulate and test hypotheses by performing laboratory, simulation or field experiments in at least two of the natural science disciplines; one of these experimental components should develop in greater depth students' laboratory experience in the collection of data, its statistical and graphical analysis, and an appreciation of its sources of error and uncertainty

Example #3

Formulate and test hypotheses by performing laboratory, simulation, or field experiments in at least two of the natural science disciplines (one of these experimental components should develop, in greater depth, students' laboratory experience in the collection of data, its statistical and graphical analysis, and an appreciation of its sources of error and uncertainty)

BETTER: Students will be able to test hypotheses

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Formulate and test hypotheses by performing laboratory, simulation, or field experiments in at least two of the natural science disciplines (one of these experimental components should develop, in greater depth, students' laboratory experience in the collection of data, its statistical and graphical analysis, and an appreciation of its sources of error and uncertainty)

BETTER: Students will be able to test hypotheses.

Indicators:

- Data collection
- Statistical Analysis
- Graphical Analysis
- Identification of sources of error

Consider…

- How many outcomes? What's reasonable at each level?
- Cognitive Level
- Are performance indicators embedded in the outcome?

Curriculum Mapping

Or….Where to measure learning

CASC General Ed Outcomes

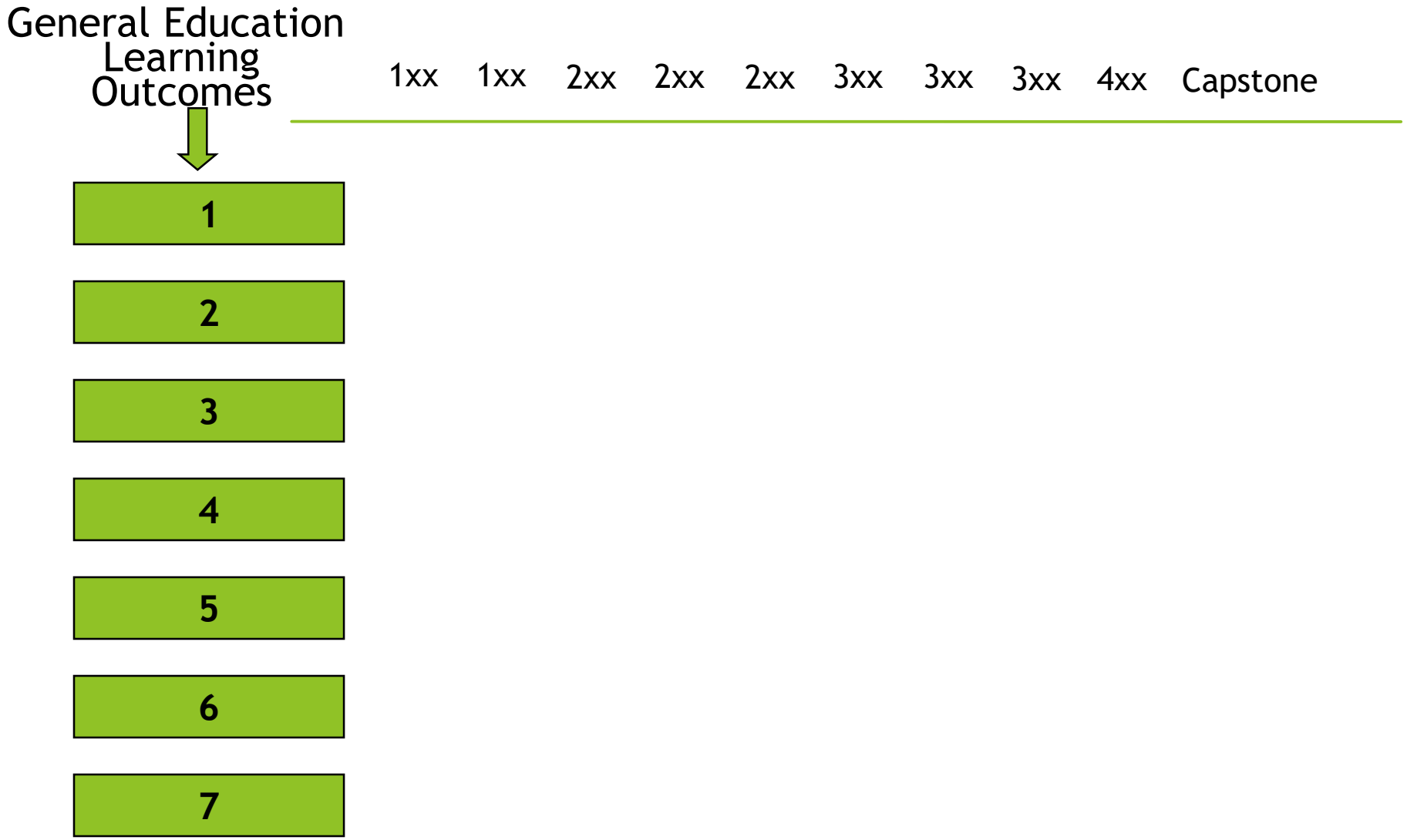
Students will be able to …

…demonstrate technologic and information literacy

…think critically

…communicate effectively

…practice global and civil awareness


General Education Learning Outcomes
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4xx
Capstone
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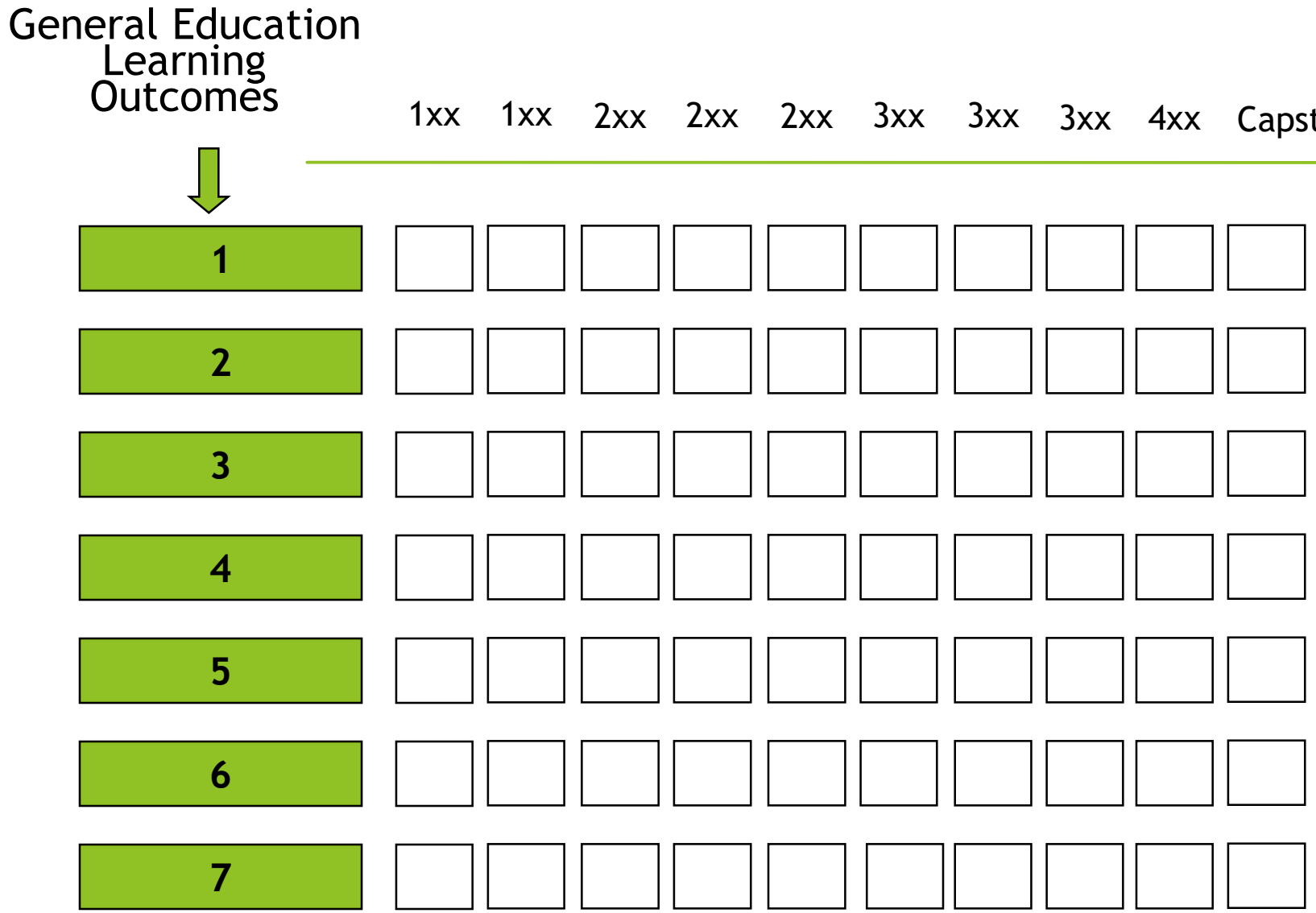
6
7


General Education Learning Outcomes
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4xx
Capstone
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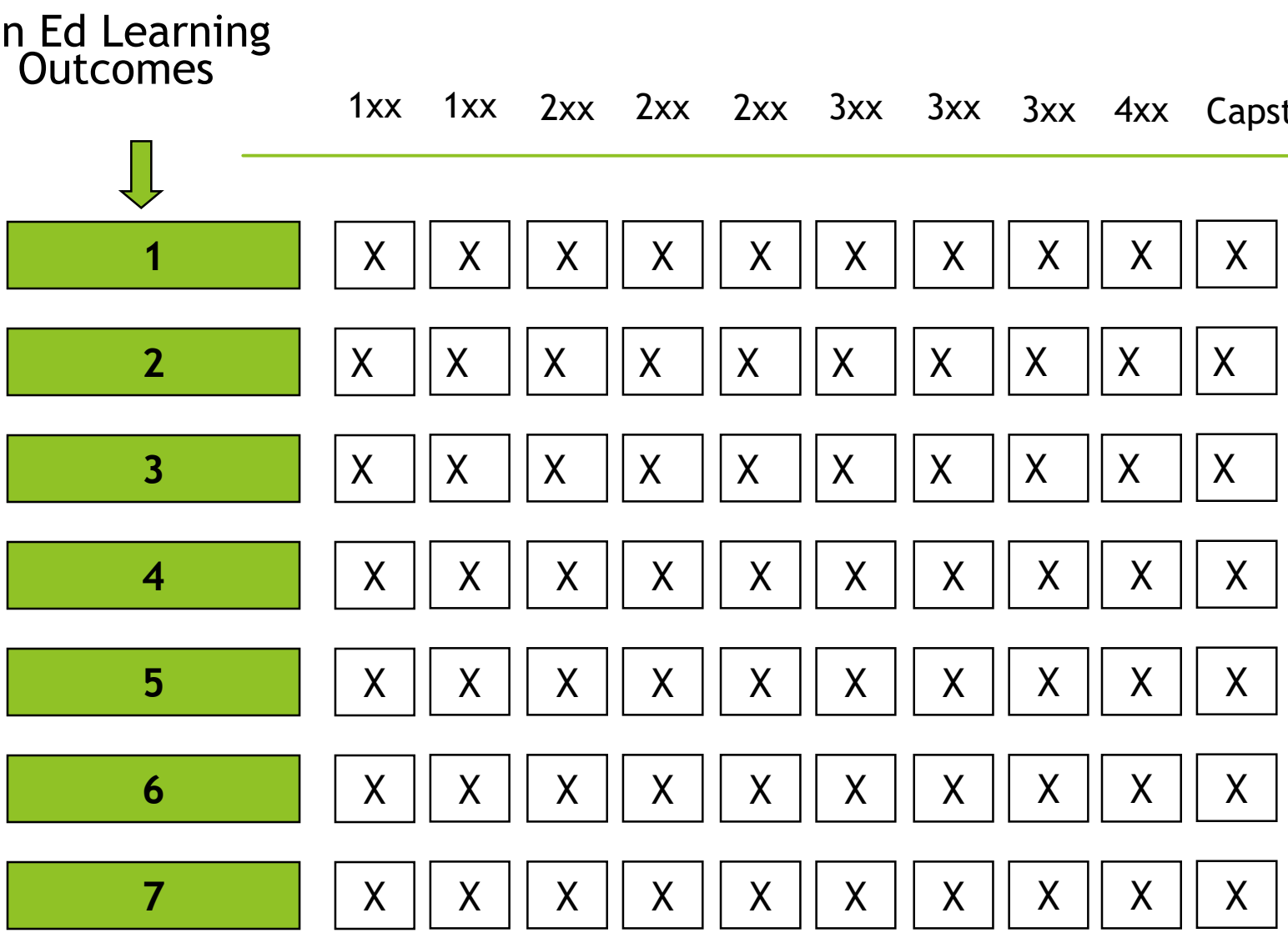
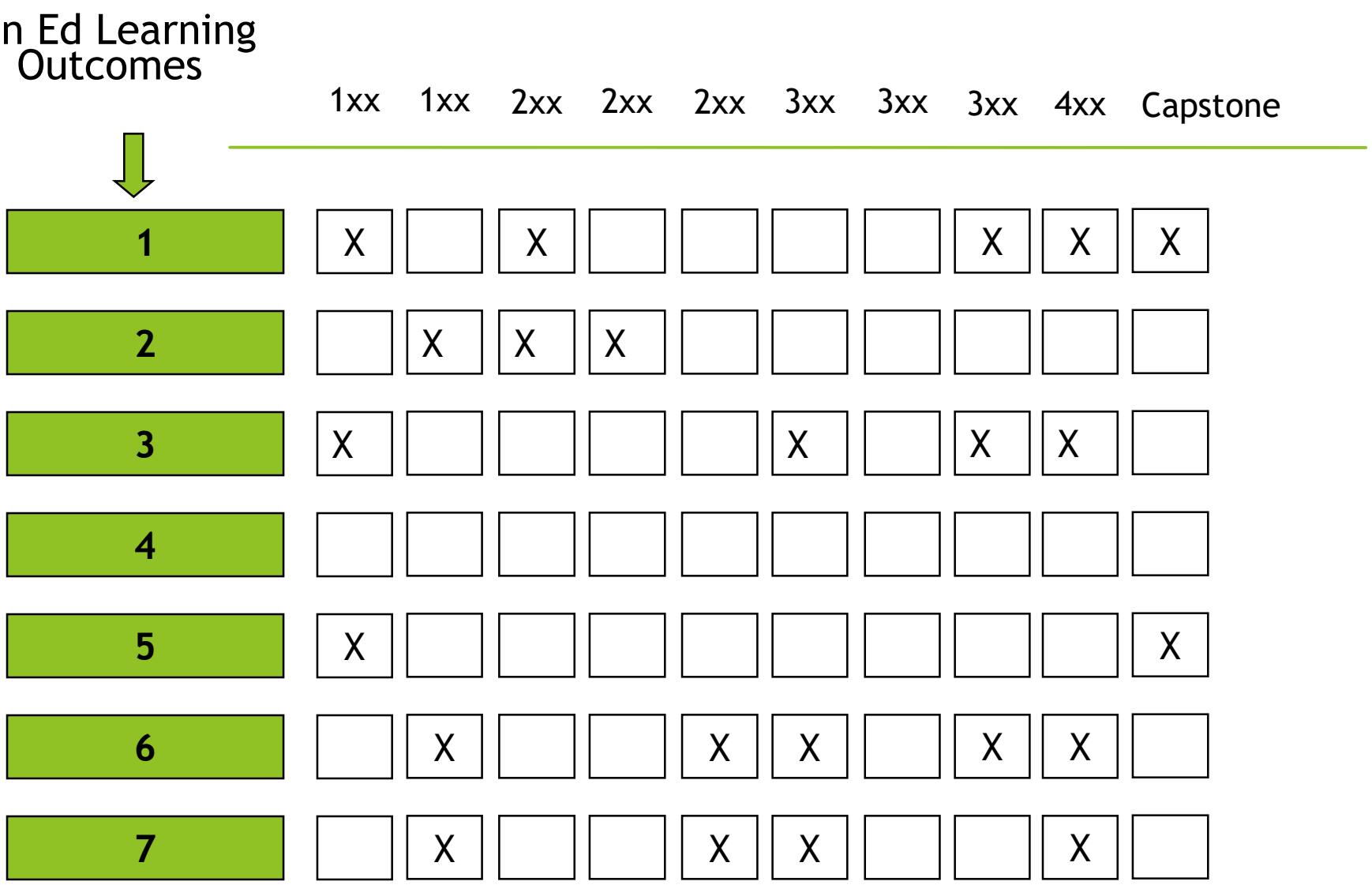
Gen Ed Learning Outcomes



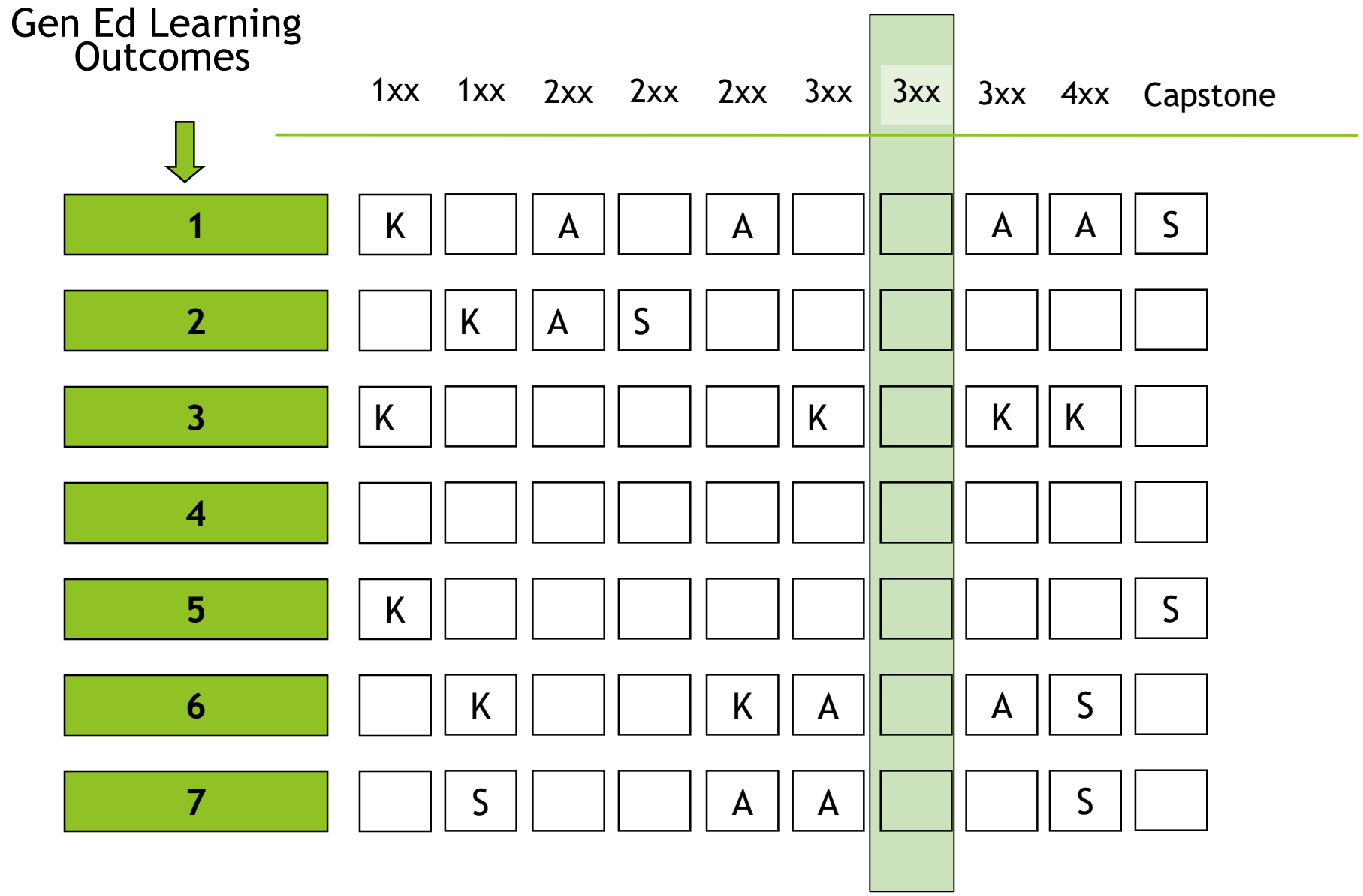
Gen Ed Learning Outcomes



Gen Ed Learning Outcomes

	1xx	1xx	2xx	2xx	2xx	3xx	3xx	3xx	4xx	Capstone
1	K		A		A			A	A	S
2		K	A	S						
3	K					K		K	K	
4										
5	K									S
6		K			K	A		A	S	
7		S			A	A			S	

K= Knowledge/Comprehension; A= Application / Analysis; S= Synthesis /Evaluation


Gen Ed Learning Outcomes
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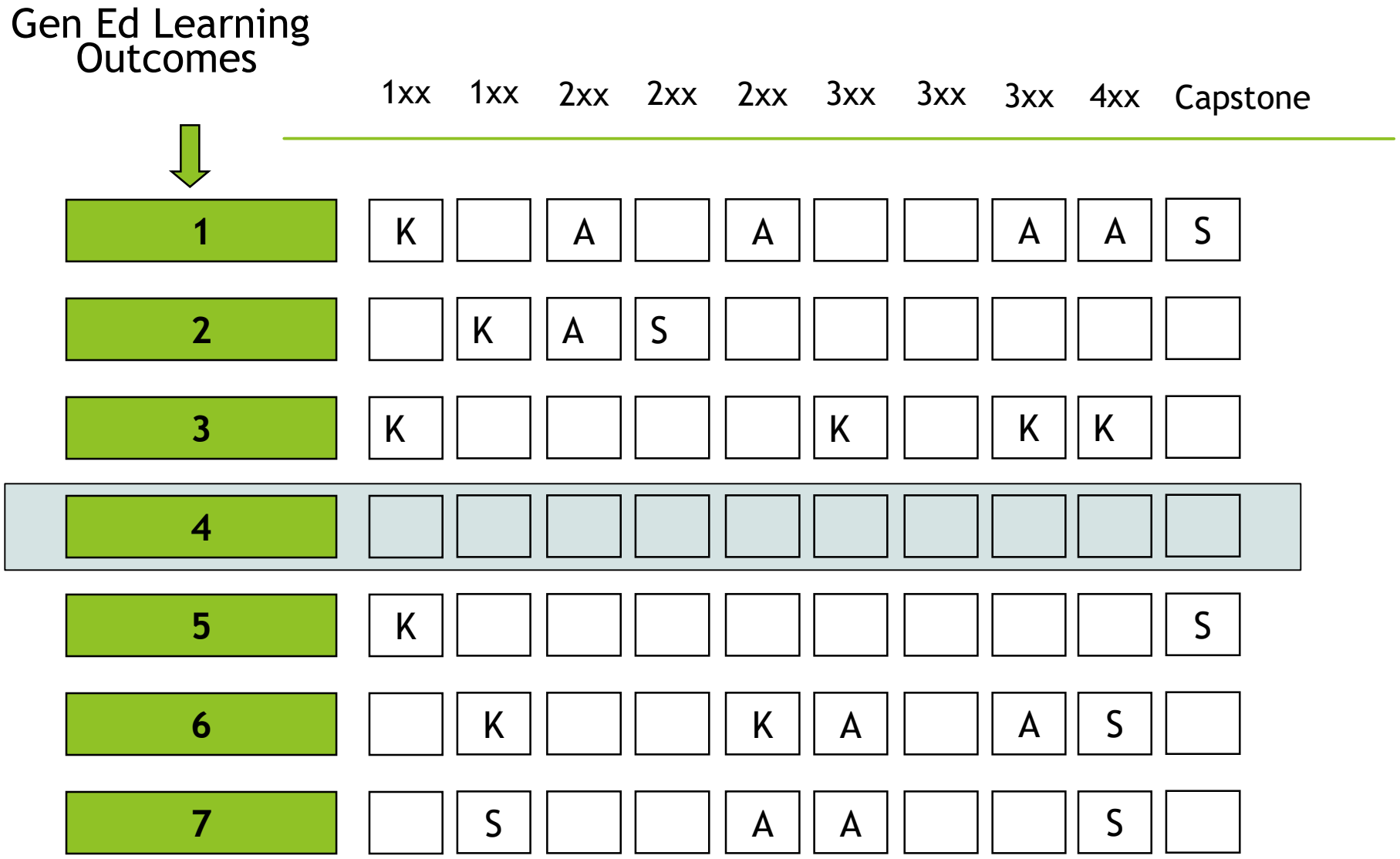
K= Knowledge/Comprehension; A= Application / Analysis; S= Synthesis /Evaluation



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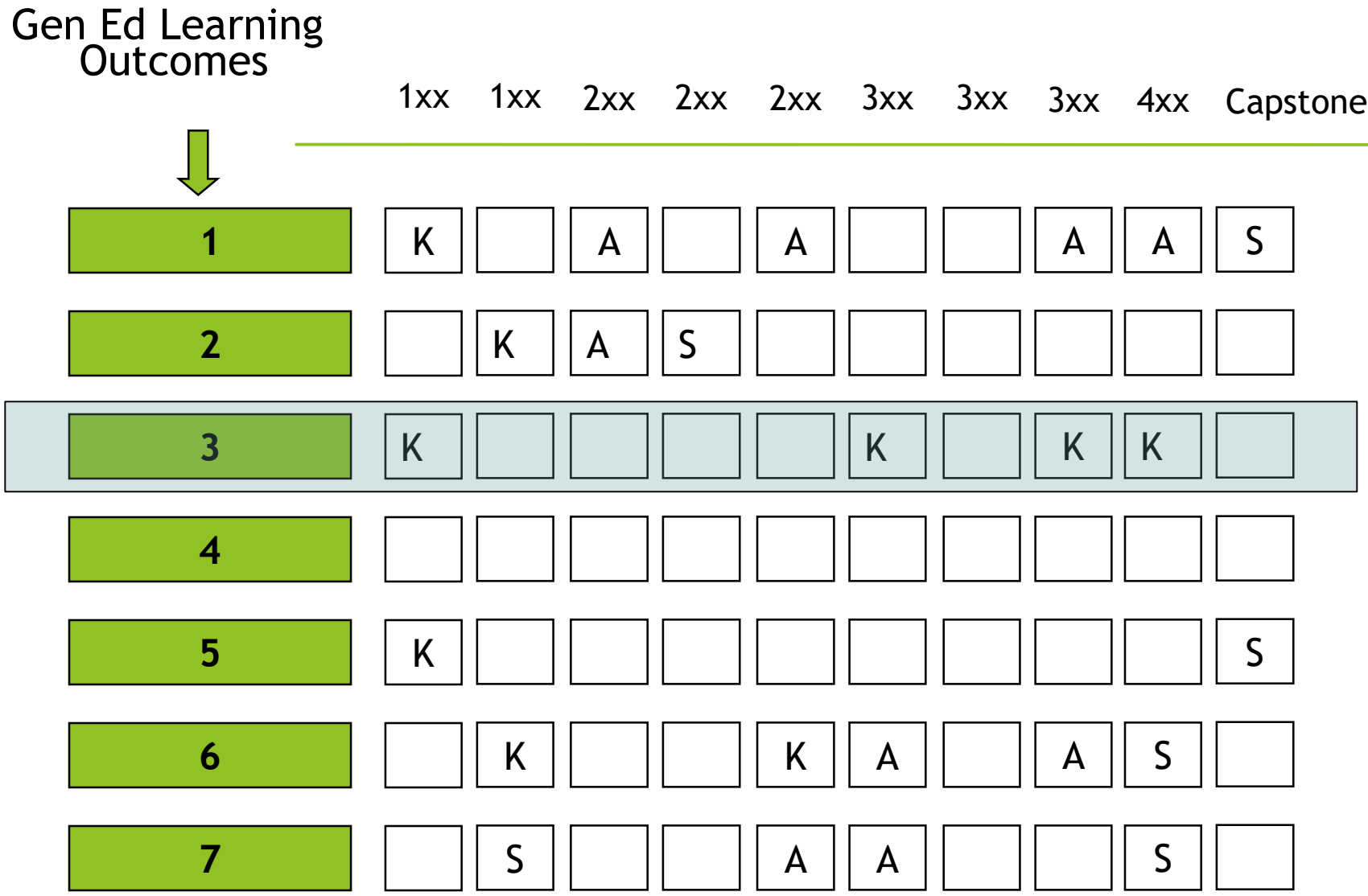

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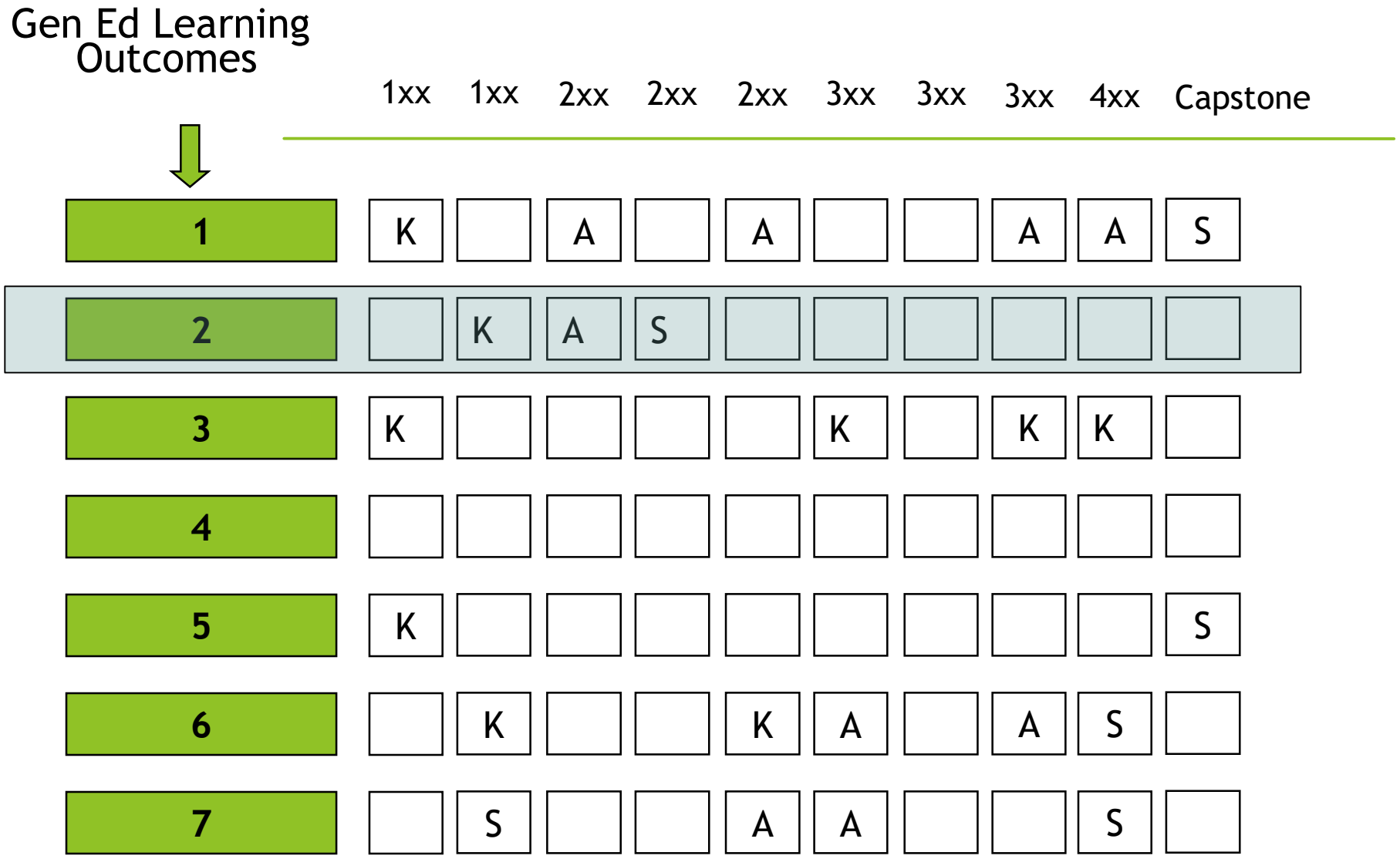
Gen Ed Learning Outcomes
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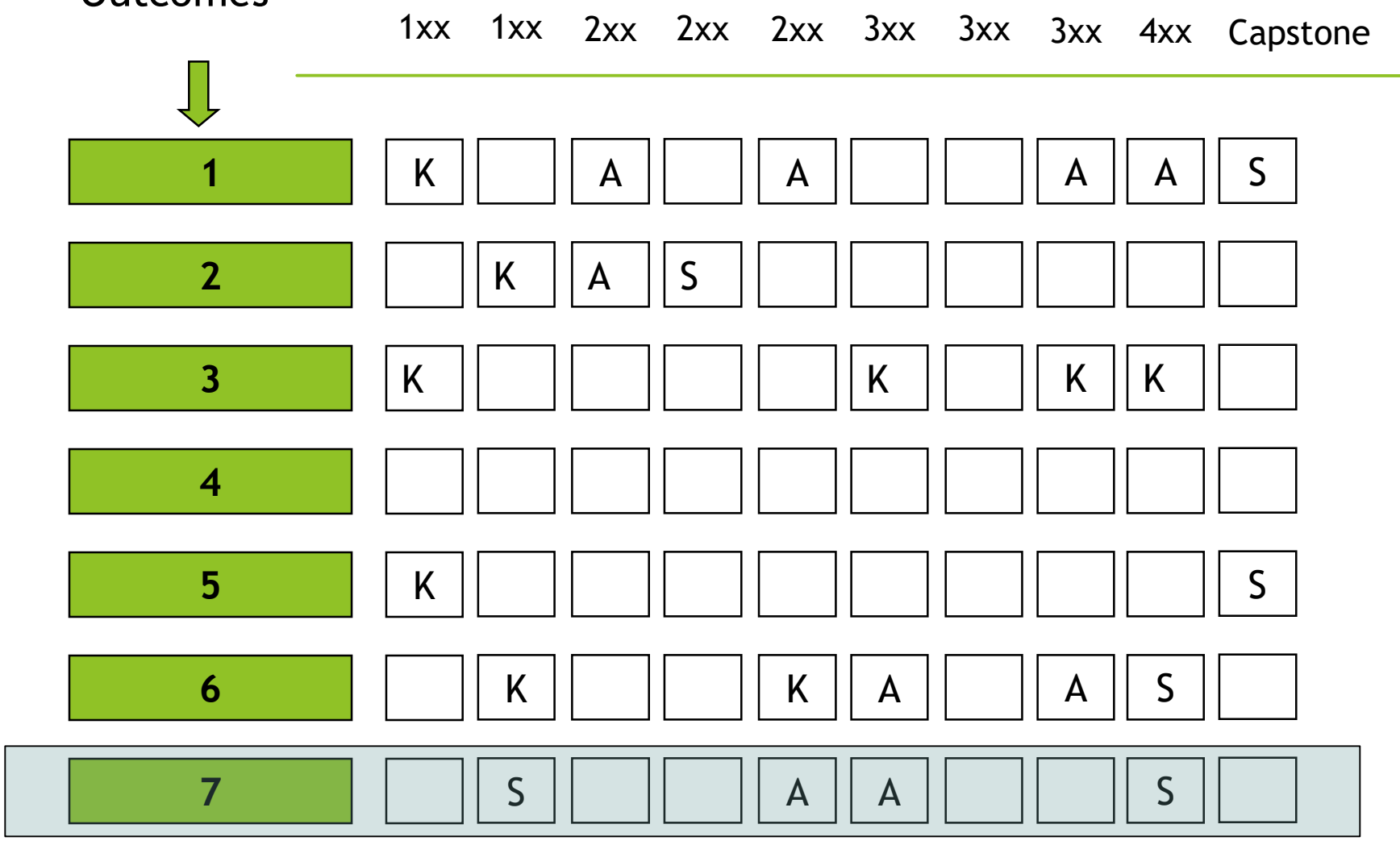
K= Knowledge/Comprehension; A= Application / Analysis; S= Synthesis /Evaluation

Gen Ed Learning Outcomes



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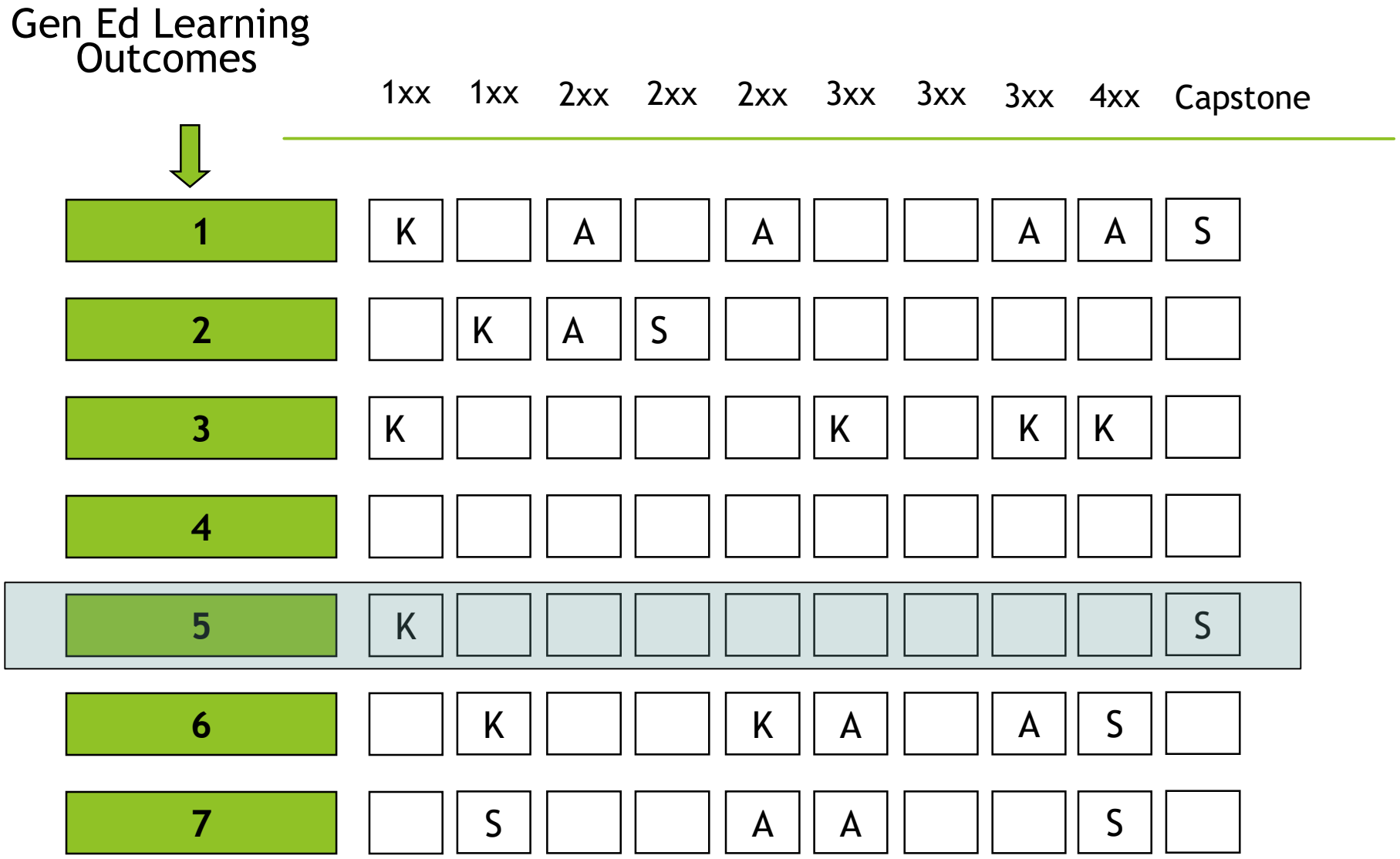

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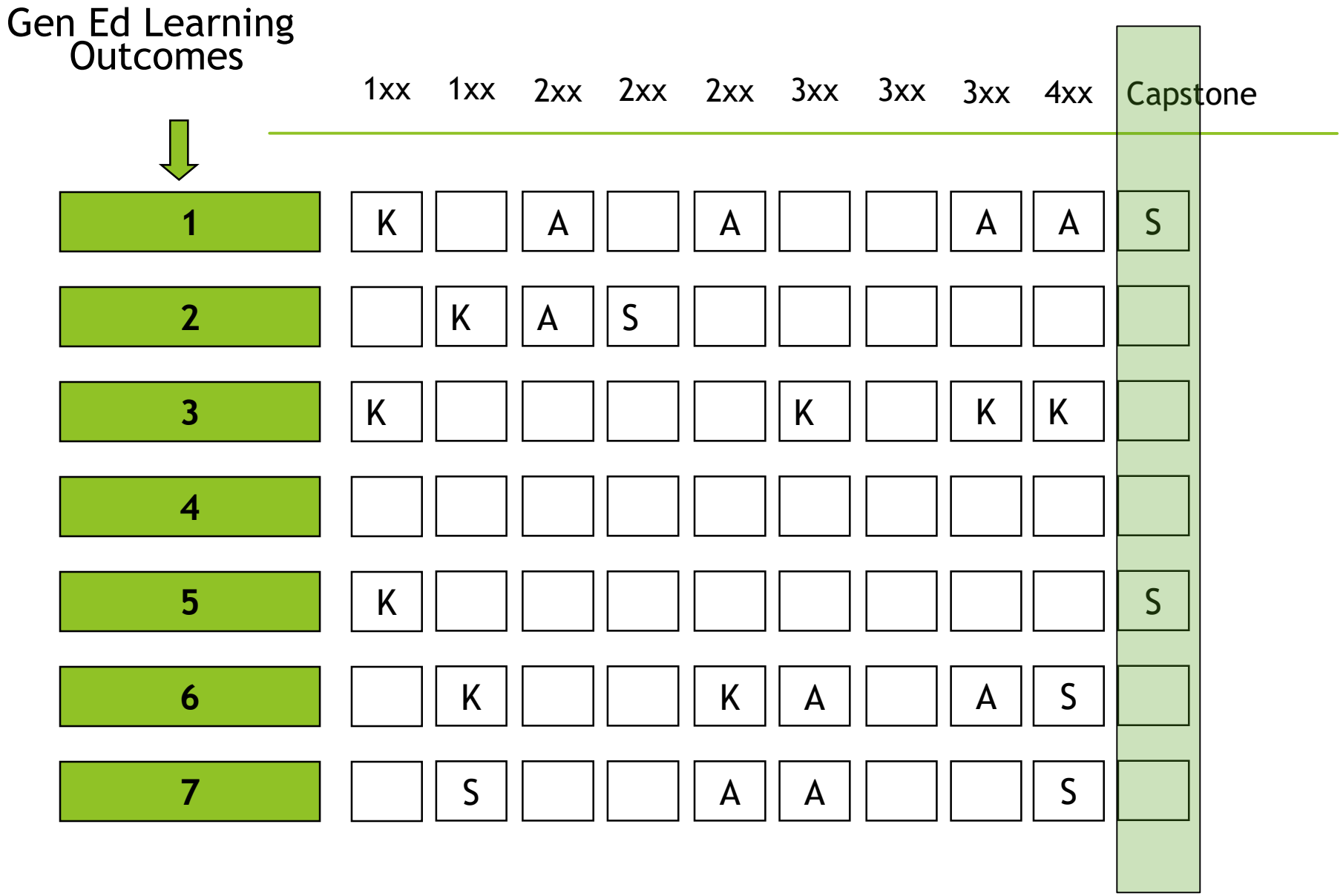

K= Knowledge/Comprehension; A= Application / Analysis; S= Synthesis /Evaluation

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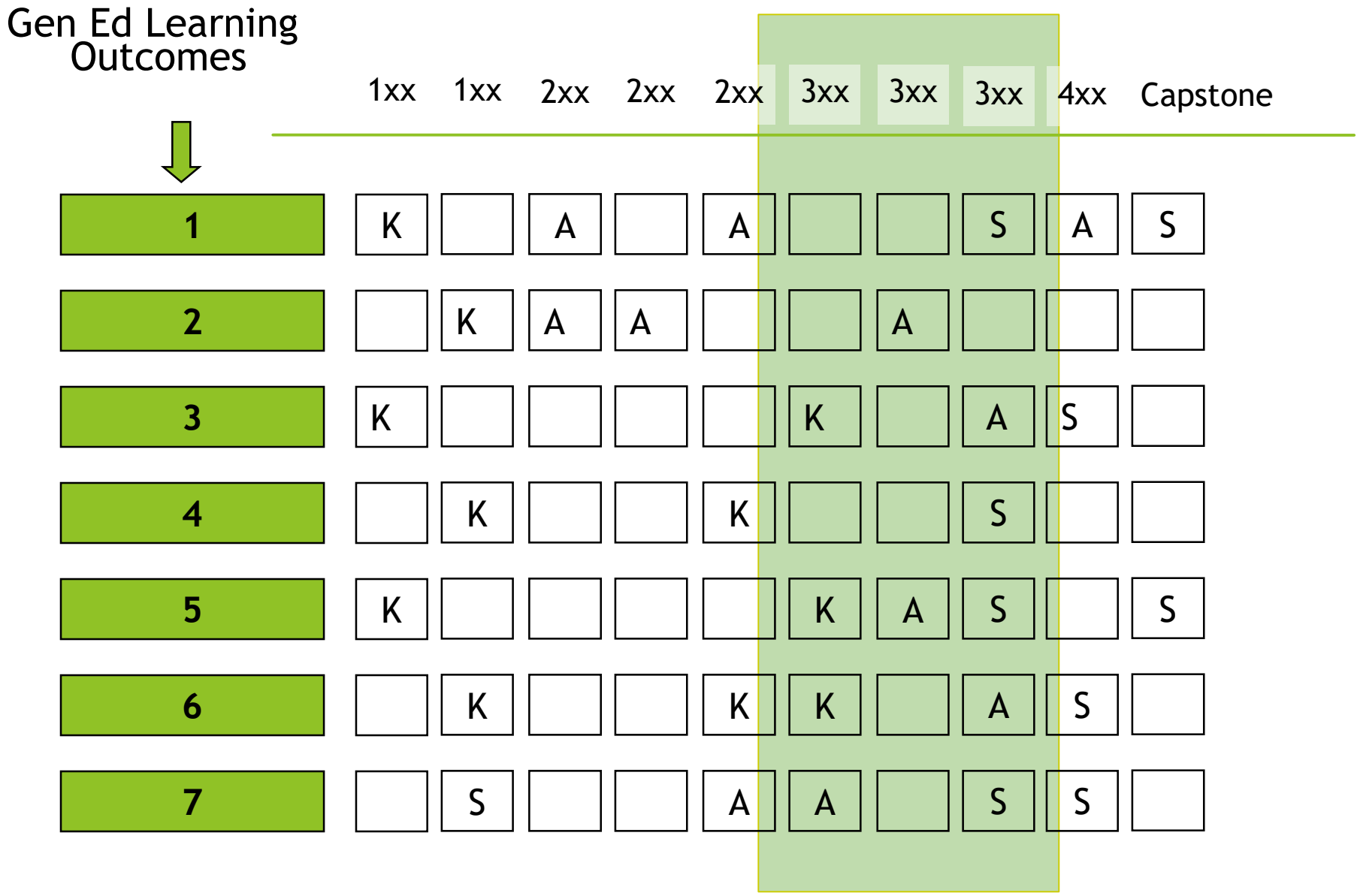

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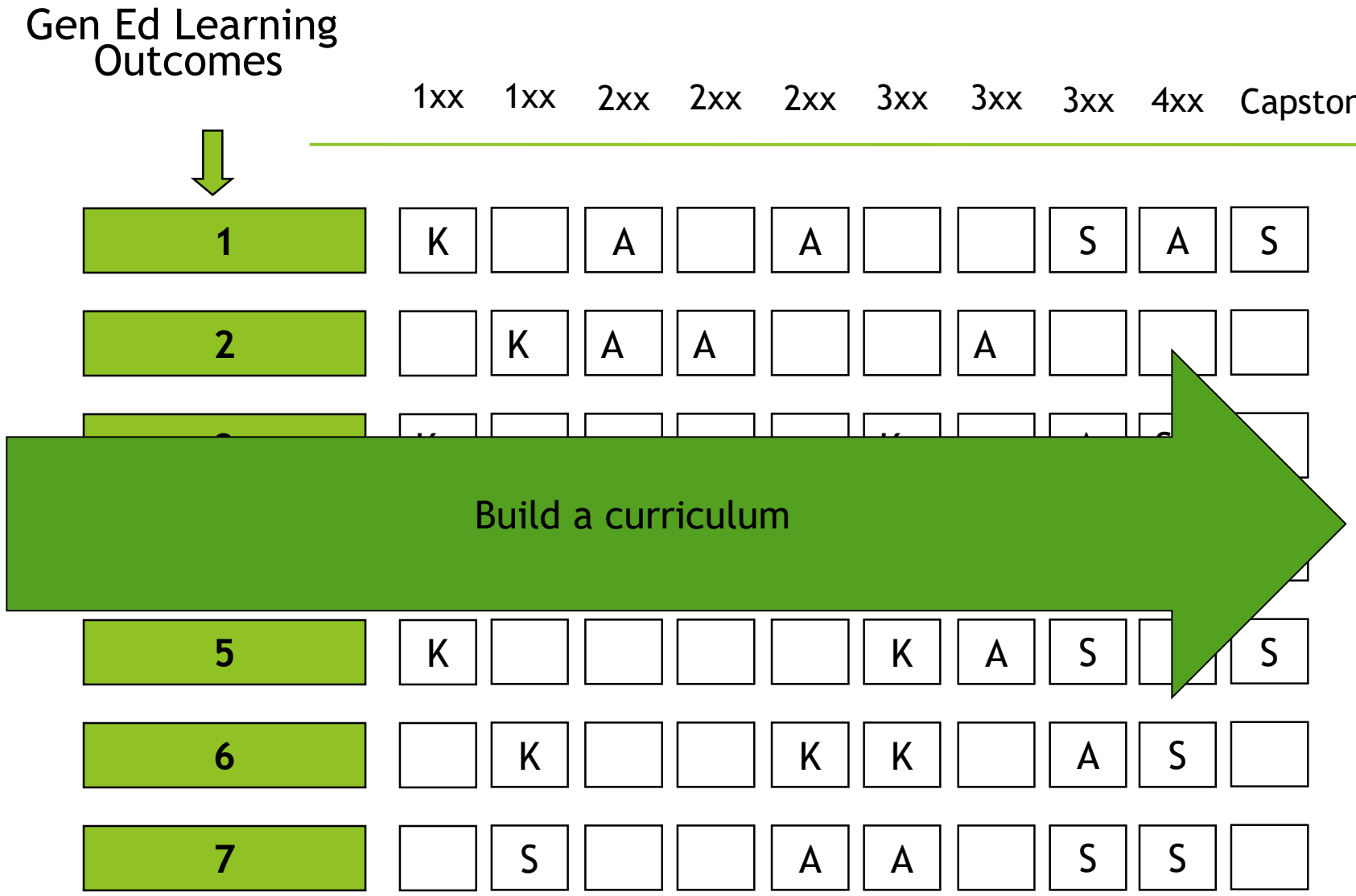

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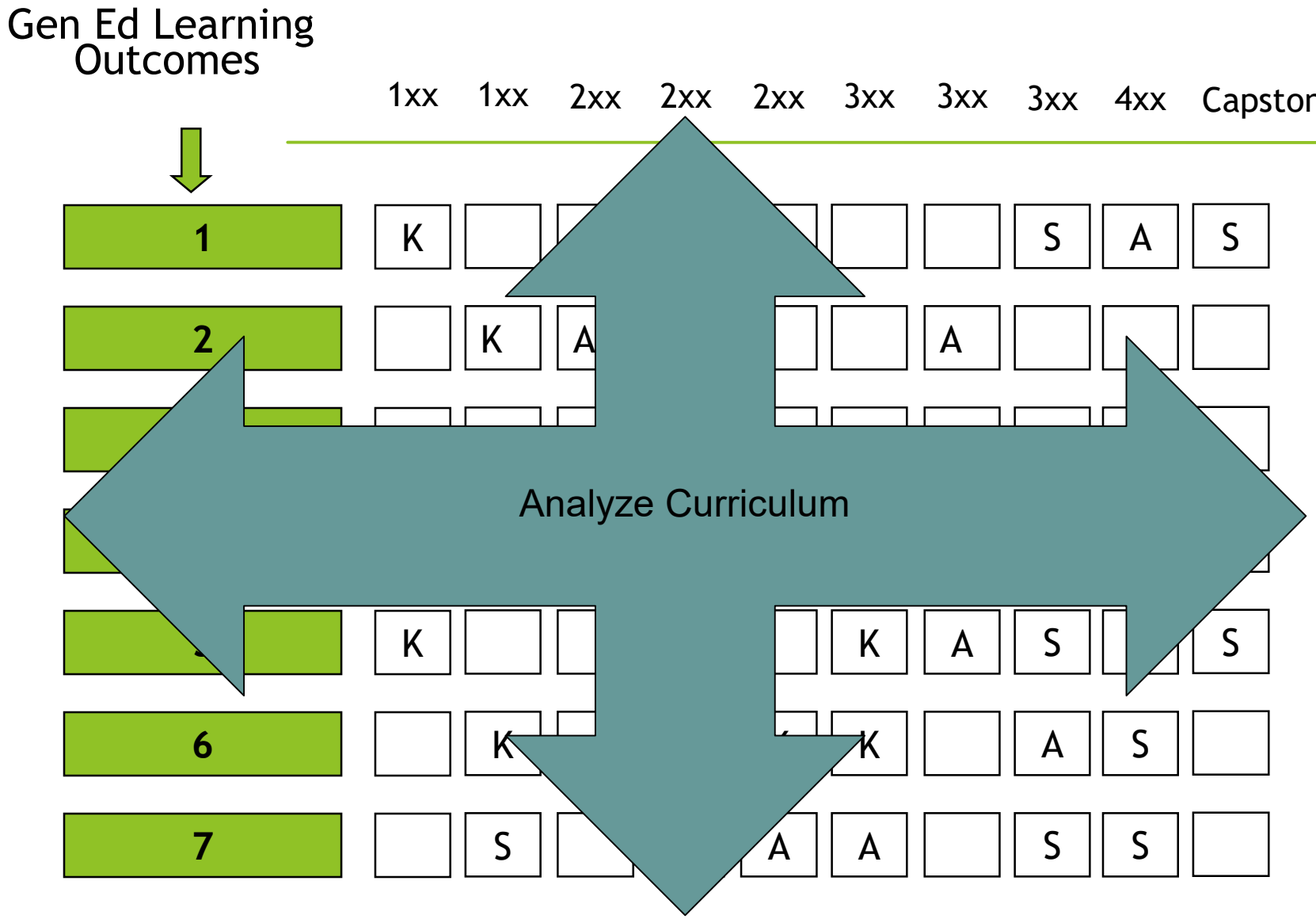

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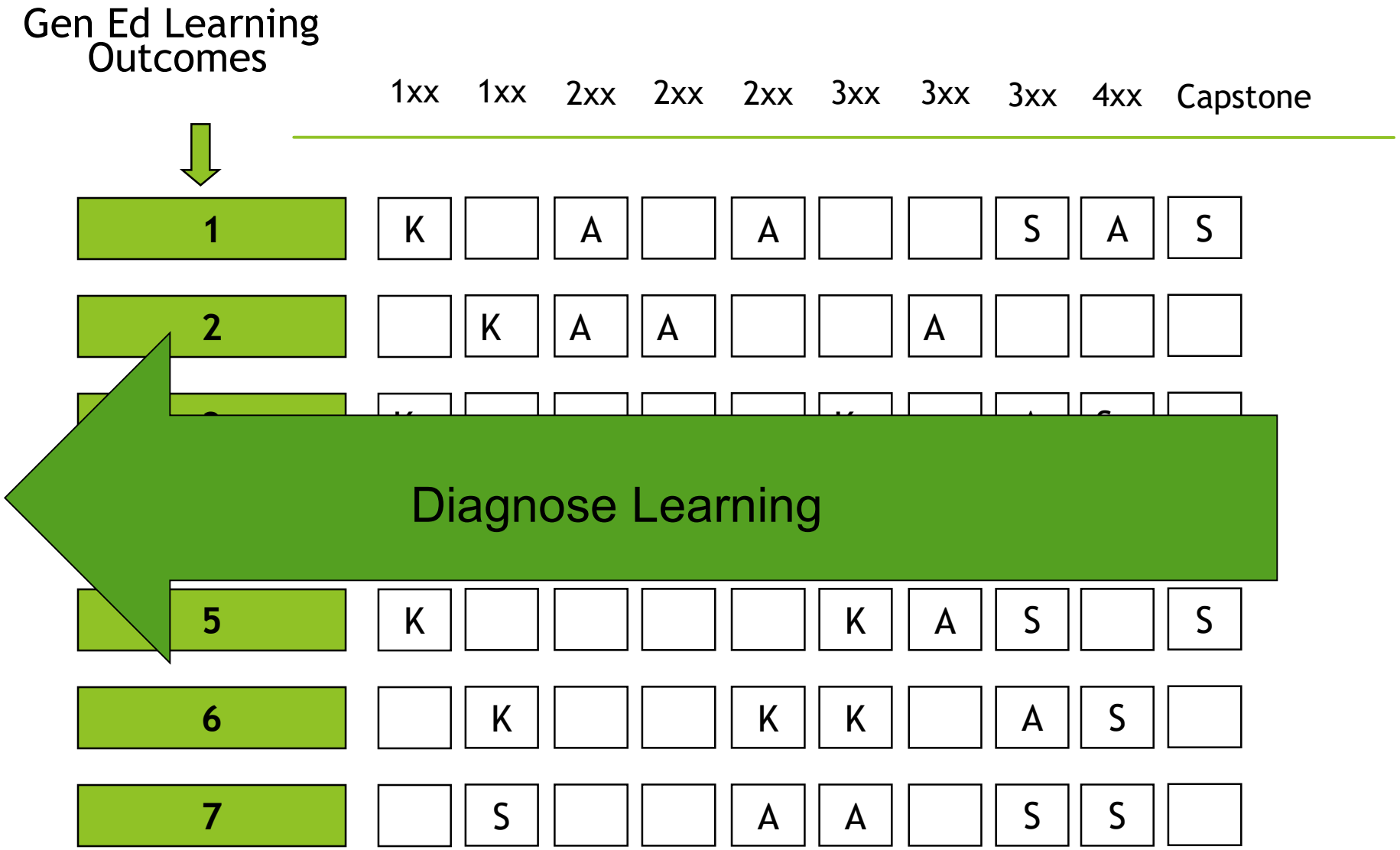

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