Quantitative Assessment for Qualitative Practices

Creating Effective Rubrics and Assessment
Practices for Studio-based and other Traditionally
Qualitative Courses

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Participants will be able to:

Recognize a process for creating quantitative performance task assessment for aesthetic and creative practices

- To correlate student competencies to grading

- To clarify overall project grading

Align course/program outcomes with rubric criteria

- To connect student learning with course/program objectives

- To ease assessment reporting of specific objectives

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$2 > -3$

$0.999... = 1$

∞

$+$ $-$

$\times$ $\div$

$\pi \approx 3.14$ 5^2

$\sqrt{2}$ $1 + 2 \cdot 3$

$(1 - 2) + 3$

$5(2 + 2)$

$101_2 = 5_{10}$

Quantitative

Qualitative
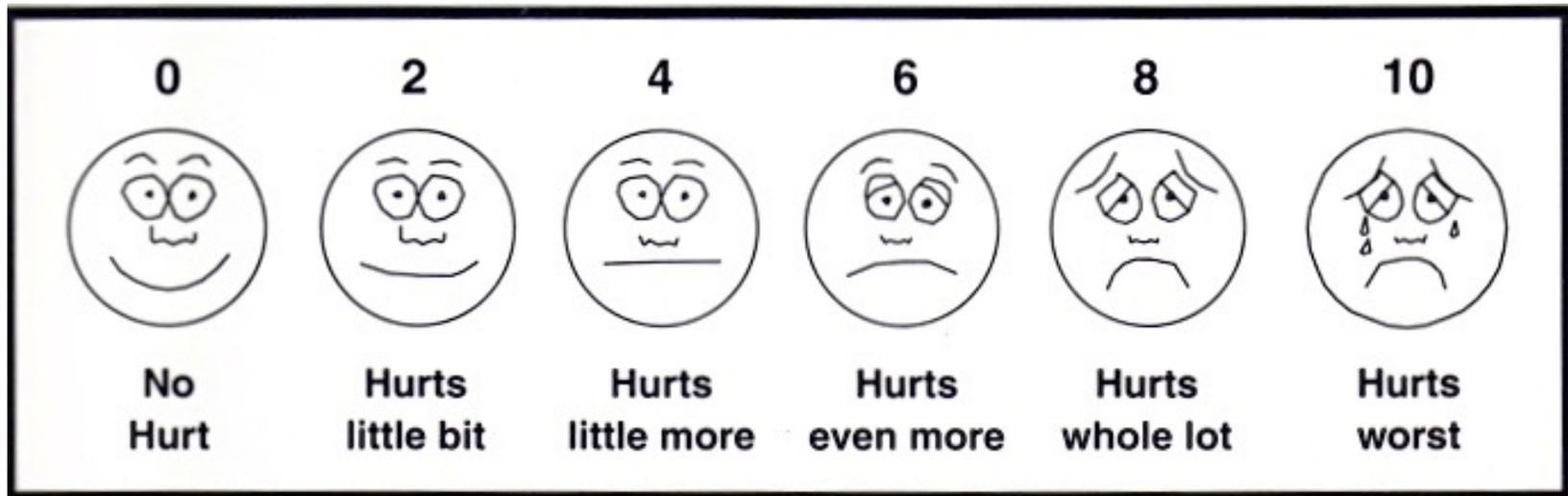
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Generic Rubric Layout

Criteria ↓	←	Levels	→
		Descriptors	

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Design Essentials Project Rubric   Dana Scott, ScottD@philau.edu

	Excellent	Proficient	Developing	Needs Improvement
Design and Execution of Project Goals (30%)	30-25 Produces outstanding design solutions to the problems presented in the project, and stays within project parameters fulfilling all project goals.	26-21 Shows proficiency in producing design solutions to the problems presented in the project and/or is close to the project parameters and fulfilling all project goals	21-18 Is developing skills in producing design solutions to the problems presented in the project and/or has moved away from the project parameters or has not fulfilled all project goals	18-0 Needs improvement in producing an effective design solution to the problems presented in the project and/or has not fulfilled project goals
Creativity (25%)	25-22 Shows a high degree of risk taking. Comes up with a variety of solutions to the problems presented in the project. Pushes the boundaries of the project while staying within project parameters.	22-19 Shows some risk taking. Moderate use of experimentation and variety in finding solutions to the problems presented in the project. Begins to push the boundaries of the project.	19-15 Shows some experimentation and variety in finding solutions to the problems presented in the project. Does not push ideas beyond those stated in the project parameters.	15-0 Shows little experimentation and variety in finding solutions to the problems presented in the project. Does not push ideas beyond those stated in the project parameters.
Craftsmanship (25%)	25-22 Presents projects in a neat, clean, professional manner. Shows a great amount of skill and effort in working with the given medium.	22-19 Presents projects in a somewhat professional manner. Makes an effort to work skillfully with the given medium.	19-15 Needs improvement in working skillfully with the given medium. Design is compromised due to messy presentation.	15-0 Does not show effort in working with the given medium. Design is compromised or unintelligible due to messy presentation.
Research (10%)	10 Presents research of multiple solution options to broaden potential outcomes. Gathers research from a variety of sources to feed ideas. Resources are kept in a organized and usable manner in sketchbook.	9-8 Shows some effort to research multiple solution options. Gathers research to feed ideas. Resources are kept in a organized and usable manner in sketchbook.	8-6 Shows little effort to research multiple solution options. Some resources are visible in sketchbook.	6-0 Shows no effort to research multiple solution options. Sketchbook lacks evidence of research/resources.
Productivity (10%)	10 Comes prepared for class. Uses class time effectively. Engages in conversations with instructor and peers to advance critical thinking and problem solving within the project.	9-8 Comes prepared for class. Makes an effort to use class time effectively. Participates in conversations with instructor and peers to advance critical thinking and problem solving within the project.	8-6 Is not always prepared for class. Needs improvement on using class time effectively. Does not often seek feedback from instructor and peers.	6-0 Is often unprepared for class. Does not use class time effectively. Does not often seek feedback from instructor and peers.

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Design Essentials Project Rubric

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	Excellent	Proficient	Developing	Needs Improvement
Design and Execution of Project Goals (30%) *Demonstrate an understanding of the foundational elements and principles of design*	Produces outstanding design solutions to the problems presented in the project, and stays within project parameters fulfilling all project goals.	Shows proficiency in producing design solutions to the problems presented in the project and/or is close to the project parameters and fulfilling all project goals	Is developing skills in producing design solutions to the problems presented in the project and/or has moved away from the project parameters or has not fulfilled all project goals	Needs improvement in producing an effective design solution to the problems presented in the project and/or has not fulfilled project goals
Creativity (25%) *Explore ideas through innovation and experimentation with a variety of media*	Shows a high degree of risk taking. Comes up with a variety of solutions to the problems presented in the project. Pushes the boundaries of the project while staying within project parameters.	Shows some risk taking. Moderate use of experimentation and variety in finding solutions to the problems presented in the project. Begins to push the boundaries of the project.	Shows some experimentation and variety in finding solutions to the problems presented in the project. Does not push ideas beyond those stated in the project parameters.	Shows little experimentation and variety in finding solutions to the problems presented in the project. Does not push ideas beyond those stated in the project parameters.
Craftsmanship (25%) *Produce well crafted, professionally presented design projects*	Presents projects in a neat, clean, professional manner. Shows a great amount of skill and effort in working with the given medium.	Presents projects in a somewhat professional manner. Makes an effort to work skillfully with the given medium.	Needs improvement in working skillfully with the given medium. Design is compromised due to messy presentation.	Does not show effort in working with the given medium. Design is compromised or unintelligible due to messy presentation.
Research (10%) *Apply research of multiple solution options to the design process*	Presents research of multiple solution options to broaden potential outcomes. Gathers research from a variety of sources to feed ideas. Resources are kept in a organized and usable manner in sketchbook.	Shows some effort to research multiple solution options. Gathers research to feed ideas. Resources are kept in a organized and usable manner in sketchbook.	Shows little effort to research multiple solution options. Some resources are visible in sketchbook.	Shows no effort to research multiple solution options. Sketchbook lacks evidence of research/resources.
Productivity (10%) *Develop time management through effective studio practice including research and homework*	Comes prepared for class. Uses class time effectively. Engages in conversations with instructor and peers to advance critical thinking and problem solving within the project.	Comes prepared for class. Makes an effort to use class time effectively. Participates in conversations with instructor and peers to advance critical thinking and problem solving within the project.	Is not always prepared for class. Needs improvement on using class time effectively. Does not often seek feedback from instructor and peers.	Is often unprepared for class. Does not use class time effectively. Does not often seek feedback from instructor and peers.

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Design Essentials: *Self Evaluation Rubric*

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	Excellent	Proficient	Developing	Needs Improvement
Design and Execution of Project Goals (30%) *Demonstrate an understanding of the foundational elements and principles of design*	10 - 9 - 8 Produces outstanding design solutions to the problems presented in the project, and stays within project parameters fulfilling all project goals.	7 - 6 - 5 Shows proficiency in producing design solutions to the problems presented in the project and/or is close to the project parameters and fulfilling all project goals	4 - 3 - 2 Is developing skills in producing design solutions to the problems presented in the project and/or has moved away from the project parameters or has not fulfilled all project goals	1 - 0 Needs improvement in producing an effective design solution to the problems presented in the project and/or has not fulfilled project goals
Creativity (25%) *Explore ideas through innovation and experimentation with a variety of media*	10 - 9 - 8 Shows a high degree of risk taking. Comes up with a variety of solutions to the problems presented in the project. Pushes the boundaries of the project while staying within project parameters.	7 - 6 - 5 Shows some risk taking. Moderate use of experimentation and variety in finding solutions to the problems presented in the project. Begins to push the boundaries of the project.	4 - 3 - 2 Shows some experimentation and variety in finding solutions to the problems presented in the project. Does not push ideas beyond those stated in the project parameters.	1 - 0 Shows little experimentation and variety in finding solutions to the problems presented in the project. Does not push ideas beyond those stated in the project parameters.
Craftsmanship (25%) *Produce well crafted, professionally presented design projects*	10 - 9 - 8 Presents projects in a neat, clean, professional manner. Shows a great amount of skill and effort in working with the given medium.	7 - 6 - 5 Presents projects in a somewhat professional manner. Makes an effort to work skillfully with the given medium.	4 - 3 - 2 Needs improvement in working skillfully with the given medium. Design is compromised due to messy presentation.	1 - 0 Does not show effort in working with the given medium. Design is compromised or unintelligible due to messy presentation.
Research (10%) *Apply research of multiple solution options to the design process*	10 - 9 - 8 Presents research of multiple solution options to broaden potential outcomes. Gathers research from a variety of sources to feed ideas. Resources are kept in a organized and usable manner in sketchbook.	7 - 6 - 5 Shows some effort to research multiple solution options. Gathers research to feed ideas. Resources are kept in a organized and usable manner in sketchbook.	4 - 3 - 2 Shows little effort to research multiple solution options. Some resources are visible in sketchbook.	1 - 0 Shows no effort to research multiple solution options. Sketchbook lacks evidence of research/resources.
Productivity (10%) *Develop time management through effective studio practice including research and homework*	10 - 9 - 8 Comes prepared for class. Uses class time effectively. Engages in conversations with instructor and peers to advance critical thinking and problem solving within the project.	7 - 6 - 5 Comes prepared for class. Makes an effort to use class time effectively. Participates in conversations with instructor and peers to advance critical thinking and problem solving within the project.	4 - 3 - 2 Is not always prepared for class. Needs improvement on using class time effectively. Does not often seek feedback from instructor and peers.	1 - 0 Is often unprepared for class. Does not use class time effectively. Does not often seek feedback from instructor and peers.
Growth (0%) *Range of growth in learning as it pertains to above categories (not part of calculated grade)*	10 - 9 - 8 Showed a great deal of growth as a designer. Learned new skills and advanced conceptual thinking.	7 - 6 - 5 Showed some growth as a designer. Built upon skills and conceptual thinking.	4 - 3 - 2 Showed little growth as a designer. Maintained skills or did not push conceptual thinking.	1 - 0 Did not show development or growth in design skills or learning.

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Rubric Activity
Assignment: Create the best new "candy"

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Generic Rubric Layout

Criteria ↓	←	Levels	→
Connect to course objectives			
		Descriptors	

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Generic Rubric Layout

Criteria ↓	←	Levels	→
Connect to course objectives			
How do they connect to Programmatic outcomes?	Descriptors		

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College/University Learning Outcomes

Program
[Learning Outcomes]

Course
[Objectives/
Learning Outcomes]

Rubrics

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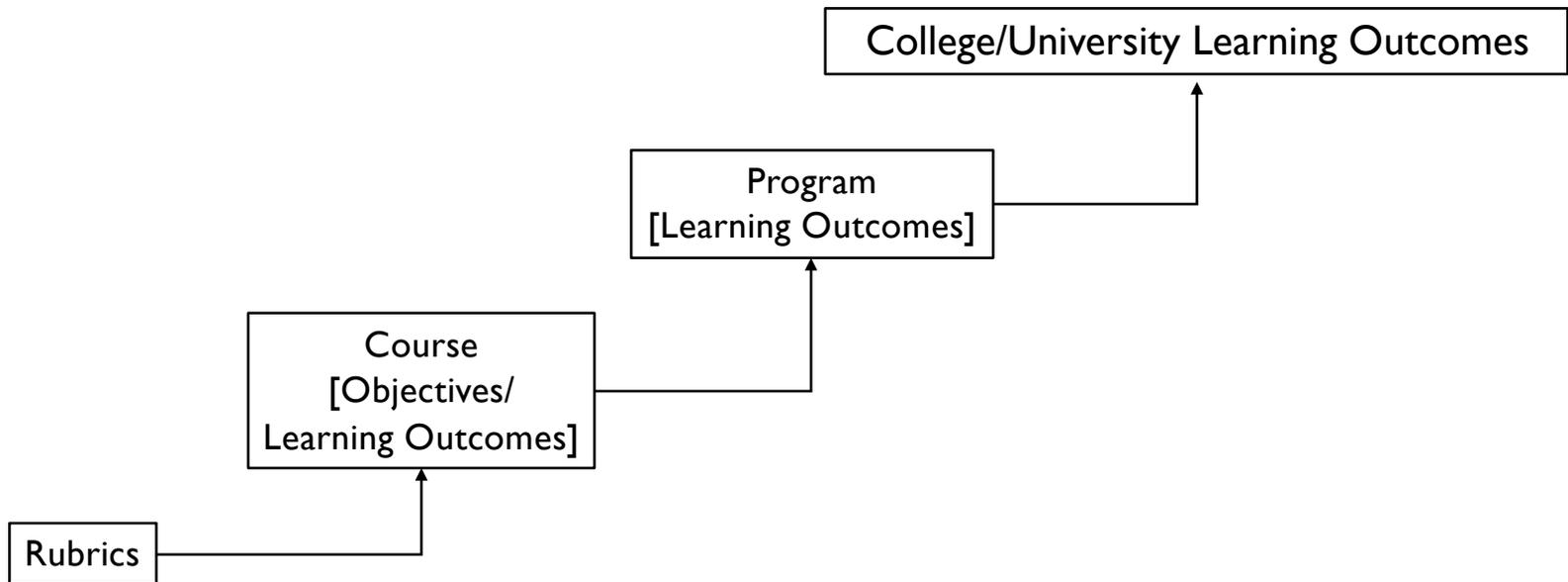
IDP – Opportunity Project Rubric

|	Accomplished	Proficient	Developing	Novice
Successfully applied elements of the design process (15%)	**90-100** Implemented varied and appropriate human-centered research techniques to accomplish a logical process.	**80-90** Implemented multiple human-centered research techniques that were usually logically sequenced.	**70-80** Implemented a few human centered research techniques and often did not follow a logical and progressive sequence.	**69-0** Did not apply the elements of design process
Used research to inform insights and identify opportunities (15%)	**90-100** Utilized multiple resources through observation and reference materials for research to inform insights and identify opportunities	**80-90** Utilized some resources with limited variety for research to inform insights and identify opportunities	**70-80** Utilized few, similar resources for research to inform insights and identify opportunities	**69-0** Did not do adequate research
Applied an iterative approach to idea generation and problem solving (15%)	**90-100** Outlines multiple approaches for idea generation and solving a problem within a specific context	**80-90** Utilizes some (2-3) methods and approaches for idea generation and solving a problem	**70-80** Utilizes few (1-2) methods and approaches for idea generation and solving a problem	**69-0** Made little or no attempt to use multiple approaches for idea generation and solving a problem
Prototyping (15%)	**90-100** Produced multiple prototypes and applied user testing to inform and facilitate the advancement of the idea/solution	**80-90** Produced a single prototype and applied user testing to inform and facilitate the advancement of the idea/solution	**70-80** Produced a single prototype but applied little or no user testing to inform and facilitate the advancement of the idea/solution	**69-0** Did not produce a prototype, or prototype was ineffective in informing and facilitating the advancement of the idea/solution
Employed integrative thinking in finding and framing problems (15%) [DEC Outcome 2: Identify different problem solving and decision making styles]	**90-100** Clearly identifies and utilizes the unique talents of all team members to help find and frame problems	**80-90** Identifies the unique talents of all team members and allows them to help find and frame problems	**70-80** Somewhat recognizes the unique talents of team members and allows them to help find and frame problems	**69-0** Does not relate the unique talents of team members to the process of finding and framing problems
Collaboration within teamwork (15%) [DEC Outcome 1: Collaborate on multidisciplinary teams]	**90-100** Consistently contributes to teamwork, facilitates the contribution of other members, and fosters a constructive team climate	**80-90** Consistently contributes to teamwork and sometimes facilitates the contribution of other members.	**70-80** Inconsistently contributes to teamwork, and makes little effort to facilitate the contribution of other members.	**69-0** Does not contribute to teamwork or promoting a constructive team climate effectively
Presentation (10%)	**90-100** The presentation is informative, well organized, easy to follow, and engaging	**80-90** The presentation is informative and organized	**70-80** The presentation lacks some information, and/or is disorganized and hard to follow.	**69-0** The presentation lacks information, is disorganized and hard to follow.

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College/University Learning Outcomes

Program
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Course
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Rubrics

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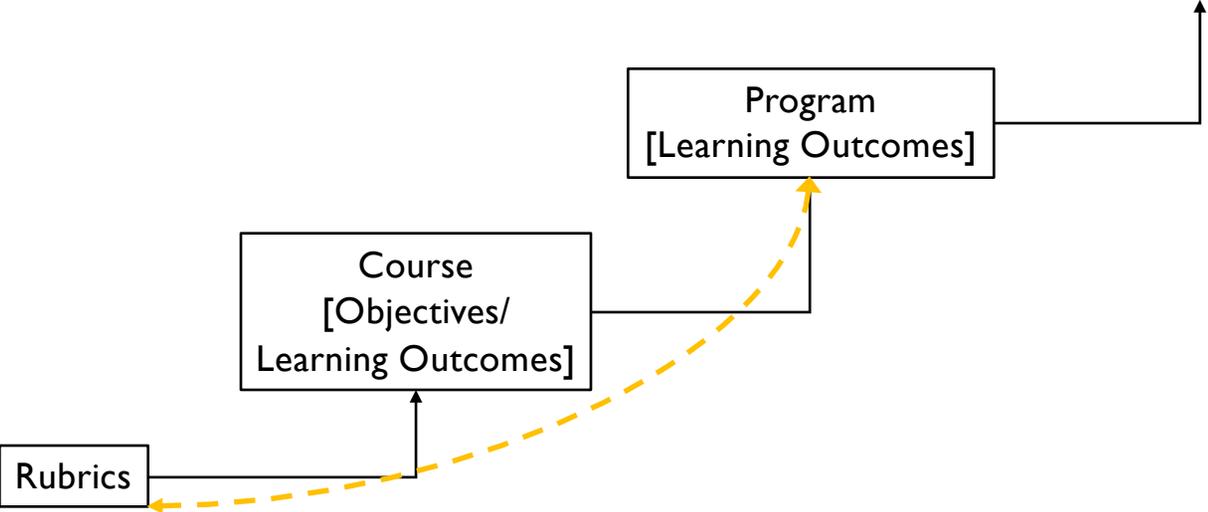
Rubric Statistics Report

Frequency Distribution
Opportunity Project Rubric2

Criteria		Accomplished	Proficient	Developing	Novice	Number Evaluation	Average	Median	Mode	Std. Deviation
Used research to inform insights and identify opportunities	Points									
		72%	28%	0%	0%	36				
Applied an iterative approach to idea generation and problem solving	Points									
		39%	22%	39%	0%	36				
Employed integrative thinking in finding and framing problems - (DEC Outcome 2: Identify different problem solving and decision making styles)	Points									
		64%	28%	8%	0%	36				
Collaboration within teamwork - (DEC Outcome 1: Collaborate on multidisciplinary teams)	Points									
		61%	31%	8%	0%	36				
Prototyping	Points									
		50%	31%	19%	0%	36				

1/17/2017

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Rubric Statistics Report

Frequency Distribution
P1-Letterform Lace: Compositional Balance Studies

Criteria		Excellent	Proficient	Developing	Needs Improvement	Number Evaluation	Average	Median	Mode	Std. Deviation
Design and Execution of Project Goals ➤ Demonstrate an understanding of the foundational elements and principles of design	Points	25.00 - 30.00	21.00 - 26.00	18.00 - 21.00	0.00 - 18.00					
		8%	62%	31%	0%	13	23.38	24.00	21.00	2.36
Creativity ➤ Explore ideas through innovation and experimentation with a variety of media	Points	23.00 - 25.00	19.00 - 23.00	15.00 - 19.00	0.00 - 15.00					
		31%	69%	0%	0%	13	22.46	23.00	23.00	1.20
Craftsmanship ➤ Produce well crafted, professionally presented design projects	Points	22.00 - 25.00	19.00 - 22.00	15.00 - 19.00	0.00 - 15.00					
		8%	85%	8%	0%	13	21.00	21.00	22.00	1.29
Research ➤ Apply research of multiple solution options to the design process	Points	10.00 - 10.00	8.00 - 9.00	6.00 - 8.00	0.00 - 6.00					
		38%	62%	0%	0%	13	9.23	9.00	9.00	0.73

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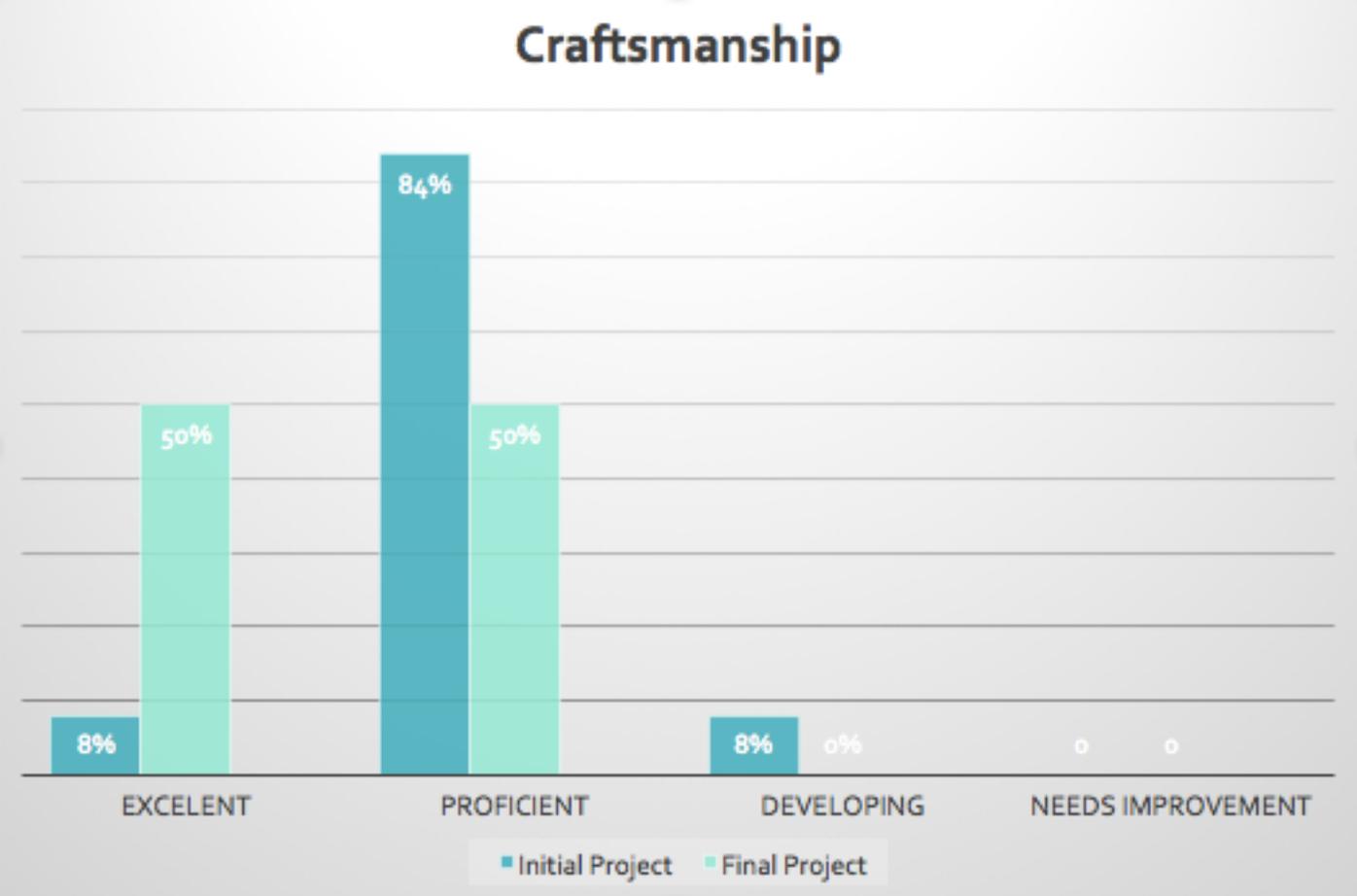
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Conclusions:

- Assigning quantitative values to the levels of competency brought clarity to the grading system and eliminated discrepancies.

- By the 2nd or 3rd project, students' self-evaluations, using the same rubric, often closely matched those of the instructor.

- Keeping the rubric language linked to objectives and competencies, rather than aspects of specific assignments, allowed fluidity and reinforced learning goals.

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Conclusions:

- Consistent use of a uniform language for the competencies promoted a greater understanding of the grading system and a better self-awareness of growth as a student.

- Balancing the overall rubric values between critical thinking and problem solving, creativity, and craftsmanship encouraged students to work through multiple iterations, take risks, and improve craftsmanship.

- Aligning the rubric criteria with the course objectives allowed for effortless reporting of overall student performance, as well as individual progress within the course.

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Thank You!

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