

Academic Digital DNA: Mapping Learning Outcomes Using E-Portfolios

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HETL Conference, Orlando, January 2013

A story...

- Architectural Engineering and CLT
- Accreditation
- Faculty commitment
- E-portfolio initiative



Why mapping?

Addressing Needs

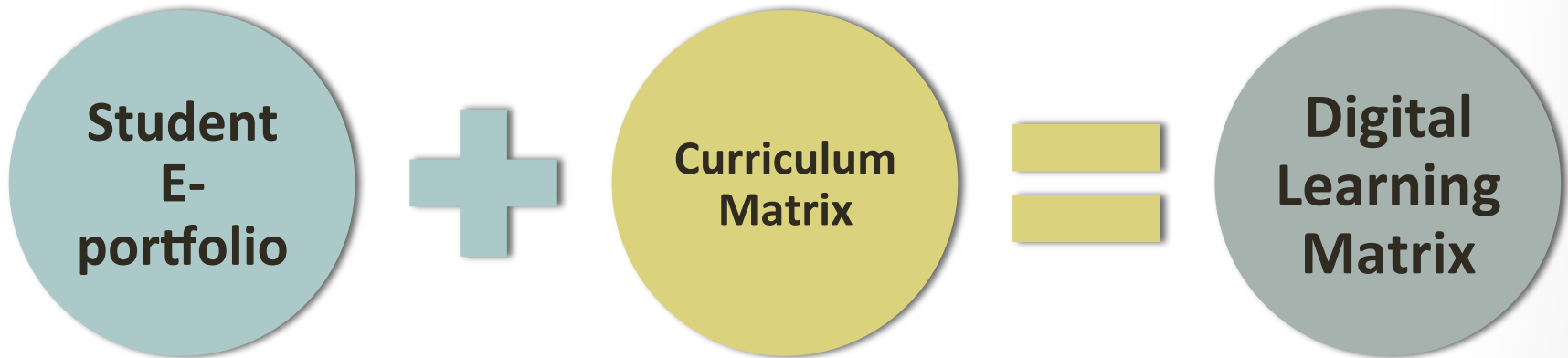
- Students
- Faculty
- Departments
- Schools/programs

Needs?

- Evidence based assessment
- Curriculum development
- Accreditation and validation
- Student placement/study abroad/career opportunities
- Program showcasing

Introduction of E-portfolios

- Piloting of student E-portfolios in AENG program and AUC
- Conventional curriculum mapping (matrix)



Lessons learned

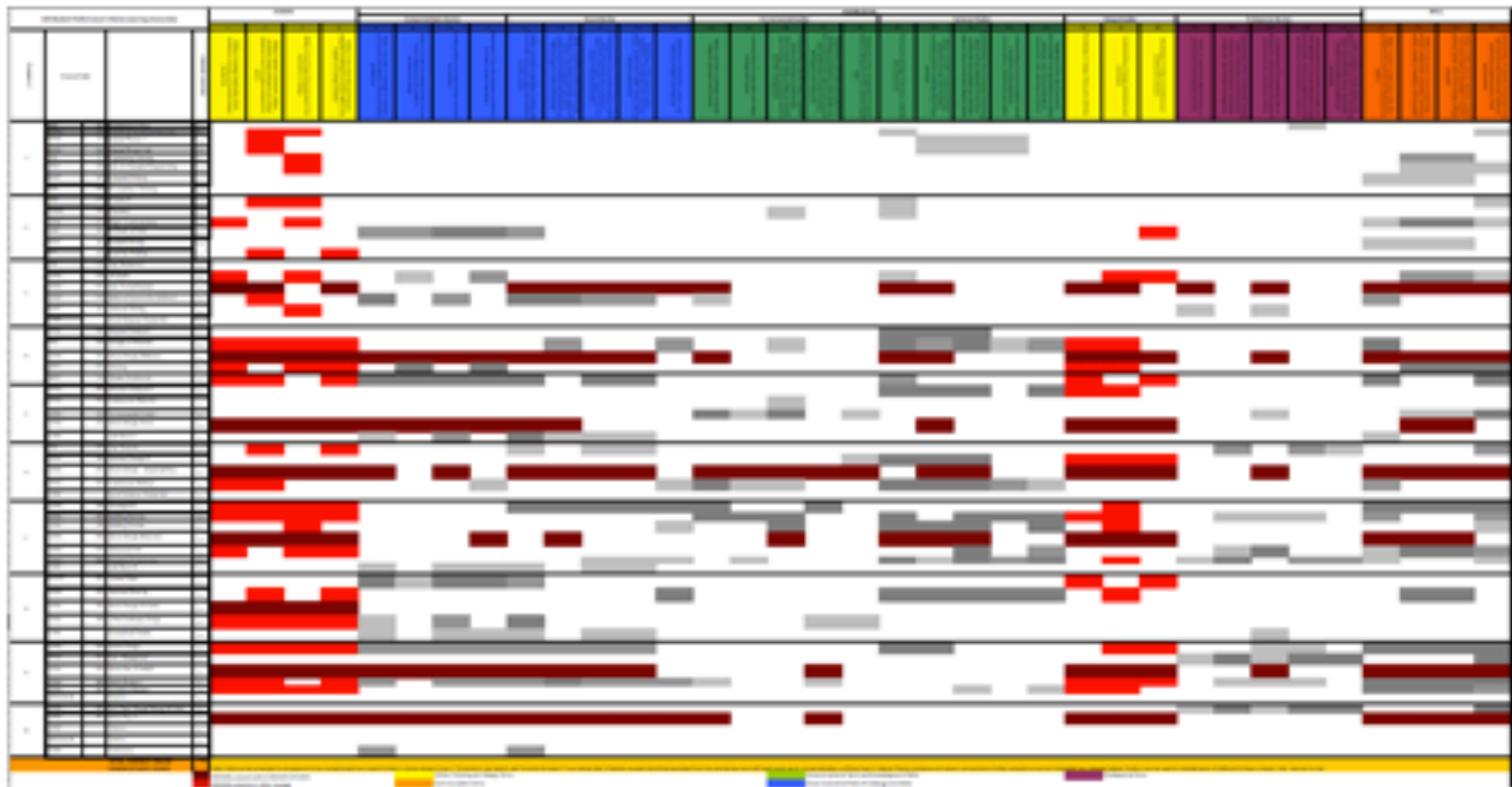
- Faculty were *resistant* to use of E-portfolios as part of assessment process
- Student *engagement* and use of E-portfolios was remarkable with a positive impact on placement and career opportunities
- *Static* nature of conventional matrix only reflected learning in a binary manner.
- **Identification of a need for a more versatile outcome-based form of curriculum mapping**

**INTEGRATING THE DIGITAL PORTFOLIO
WITH CURRICULUM MAPPING**

Advantages of the Digital Learning Matrix

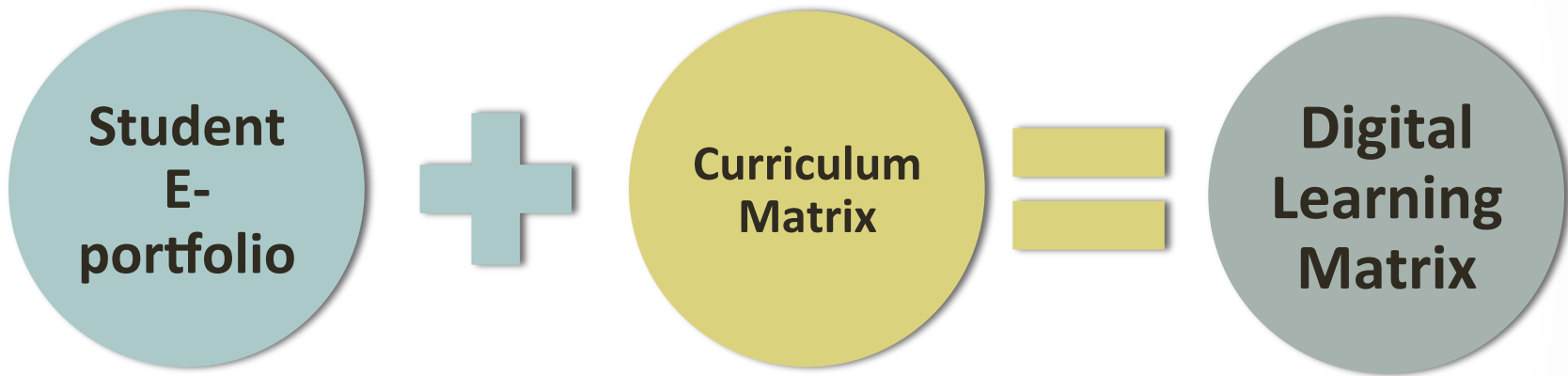
CONVENTIONAL MATRIX	DIGITAL LEARNING MATRIX
Quantitative impact on curriculum mapping	
Only allows quantitative curriculum development	
Static	
Asynchronous	
Familiar widespread use, low-tech demands	
Individual	
Descriptive	
Accreditation processes	

Conventional Mapping and Curriculum DNA



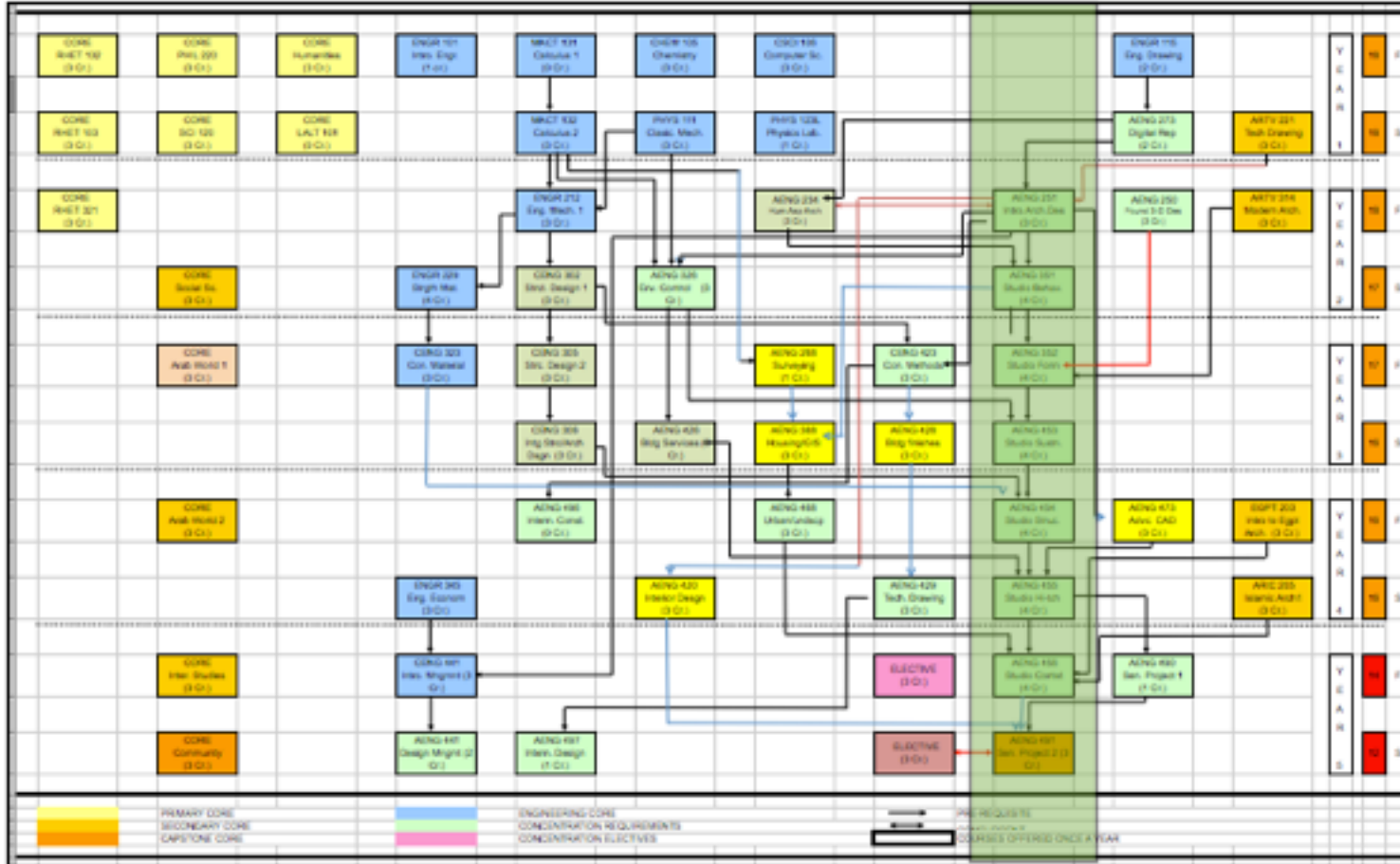
Conventional Mapping and Digital DNA

The image displays a complex grid-based mapping table, likely a project schedule or resource allocation chart. The table is organized into several horizontal sections, each with a distinct header. The top section has a yellow header, and the bottom section also has a yellow header. The main body of the table is divided into rows and columns. The columns are labeled with various project activities or tasks, and the rows represent different time periods or resource categories. The cells within the grid contain various symbols, including red and grey rectangular blocks, which likely represent the duration or allocation of resources for each activity. A blue rectangular highlight is present on one of the columns in the upper part of the grid. The overall layout is dense and detailed, typical of a Gantt chart or a similar project management tool.



DIGITAL DNA

Evidence based intra-curricular sequencing



YEARLY PROGRESS

CURRICULAR REQUIREMENTS

Illustrating Outcomes with the Digital Learning Matrix

AEC Curriculum of Courses			UIA Required Objectives of Architectural Education																
#	Course Code	Course	Cr.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	ENGR103	Introduction to Eng.	3																
1	ENGR111	Calculus & Analytical Geometry	4																
1	PHYS101	General Physics I	3																
1	PHYS102	General Physics Lab	1																
1	ENGR105	Engineering Drawing	3																
1	ENGR108	Intro. to Comp. Programming	3																
1	ENGR102	Biomedical Writing	3																
1	PHIL103	Philosophical Thinking	3																
1	ENGR110	Calculus II	3																
1	ENGR109	Chemistry	3																
1	ARCH211	1st Year Construction	3																
1	ARCH208	Art Levels of Care	2																
1	ARCH209	Research Writing	3																
1	NCI120	Scientific Thinking	3																
1	ENGR211	Eng. Mechanics I	3																
1	ARCH210	2nd Year	3																
1	ARCH211	Intro. to Architecture	3																
1	ARCH214	Behavior Sci. for Architects	2																
1	ARCH211	Technical Writing	3																
1	ENGR200	Social Systems: Structures	3																
1	ENGR200	Structural Analysis I	3																
1	ENGR229	Strength of Materials	4																
1	ARCH211	Studio Design (Structure)	4																
1	ARCH211	Planning	3																
1	ARCH214	Modern Architecture	3																
1	ENGR200	Structural Design I	3																
1	ENGR221	Construction Materials	3																
1	ARCH209	Environmental Control	3																
1	ARCH212	Studio Design (Form)	4																
1	ENGR200	Arch. World I	3																
1	ENGR103	Eng. Economy	3																
1	ENGR200	Structural Design II	3																
1	ARCH211	Studio Design (Contextualizing)	4																
1	ARCH208	Surveying	3																
1	ENGR211	Construction Methods	3																
1	ENGR200	Social Systems: Structures	3																
1	ARCH208	Housing/DOB	3																
1	ARCH209	Building Services	3																
1	ARCH214	Building Materials	3																
1	ARCH214	Studio Design (Structure)	4																
1	ARCH215	Advances/CAD	3																
1	ARCH209	Interior/Construction	3																
1	ENGR200	Arch. World II	3																
1	ARCH209	Advanced Topics	3																
1	ARCH211	Technical Drawing	3																
1	ARCH211	Studio Design (Site Tech)	4																
1	ARCH208	Urban/Landscape Design	3																
1	ENGR200	Interactive Studies	3																
1	ARCH209	Interior Design	3																
1	ENGR211	Intro. Management	3																
1	ARCH214	Studio Des. (Context)	4																
1	ARCH209	Survey Project I	3																
1	ARCH209	Interior Design I	3																
1	ARCH211	Exterior	3																
1	ARCH211	Arch. Design Mfg & Codes	3																
1	ARCH209	Survey Proj. II	3																
1	ARCH209	Exterior	3																
1	ENGR200	Community	3																
1	ARCH209	Urban/Landscape Design	3																

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AENG 334- Final proposal

February 19, 2011 [amirabdekahman](#) 19 other publications - [Subscribe](#)

This screenshot shows a digital portfolio page on Issuu. It features a central architectural floor plan with various colored zones and annotations. To the left, there are several text blocks and smaller images of interior spaces. A prominent 'Click to read' button is overlaid on the page. At the bottom, there are social media interaction icons (thumbs up/down, plus, envelope, left/right arrows, printer, flag, mail) and a search bar for the publication.

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Aeng 352 Portfolio

May 31, 2011 [masqian](#) 3 other publications - [Subscribe](#)

This screenshot displays another Issuu publication, 'Aeng 352 Portfolio'. It features a large, detailed architectural model of a building structure. The page is filled with various images, including drawings and photographs of the model from different angles. A 'Click to read' button is visible. The bottom of the page includes social media icons, a search bar, and the text 'Architecture Design course: Form [More](#)'.

Illustrating Outcomes with the Digital Learning Matrix

All Courses of Issues		UK Required Objectives of Architectural Education									
	Course	1	2	3	4	5	6	7	8	9	10
1	Architecture 1: Introduction to Architecture										
2	Architecture 2: Design and Construction										
3	Architecture 3: Design and Construction										
4	Architecture 4: Design and Construction										
5	Architecture 5: Design and Construction										
6	Architecture 6: Design and Construction										
7	Architecture 7: Design and Construction										
8	Architecture 8: Design and Construction										
9	Architecture 9: Design and Construction										
10	Architecture 10: Design and Construction										
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40	Architecture 40: Design and Construction										
41	Architecture 41: Design and Construction										
42	Architecture 42: Design and Construction										
43	Architecture 43: Design and Construction										
44	Architecture 44: Design and Construction										
45	Architecture 45: Design and Construction										
46	Architecture 46: Design and Construction										
47	Architecture 47: Design and Construction										
48	Architecture 48: Design and Construction										
49	Architecture 49: Design and Construction										
50	Architecture 50: Design and Construction										

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AENG 453 - Design 3. Sustainable Design

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Concept

"A Place to Remember" Mixed Use Complex overlooking Dehahour Road in Sixth of October - Retail and Office Spaces

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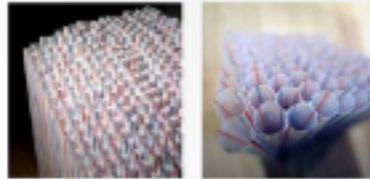
Art of Structure and Technology

Student Portfolio Examples

Final Project Designing an Architectural element (Light fixture) Using everyday objects (straw)

Concept

Using linear elements to create solid volumes of different proportions and and manipulate their surface slopes.



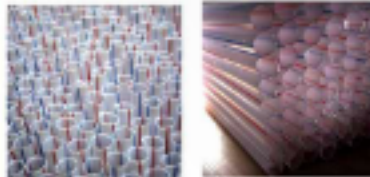
Composition

Using multiple volumes to create a flexible dynamic composition consisting in the same space and manipulating light variety.



Material

Straws. The choice of material was based on the use of an everyday available resource that can be used to make something creative and unique.



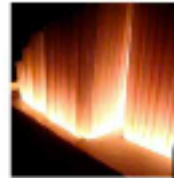
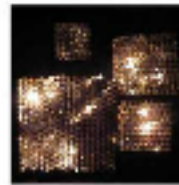
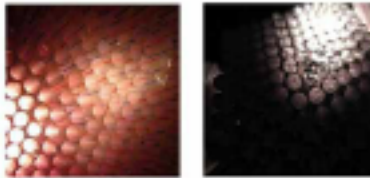
Final Product

Fixing of solid straw volumes on a light box with LED lights.



Objective

Creating a light fixture that benefits from the light reflection and refraction properties of the material.



New lessons learned with digital DNA

- Student E-portfolios added a new dimension to
 - Documenting Student learning/achievements (program specific needs)
 - Career opportunities
 - Faculty collaboration and cooperation
 - Accreditation path
 - Learning Community
 - Program showcasing



Thank-you

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