Lessons Learned in Blended Teaching and Learning Before and After COVID-19

Presented at:

16th European Real Estate Society (ERES) Education Seminar
in association with the International Real Estate Society (IRES)

Jim DeLisle, PhD
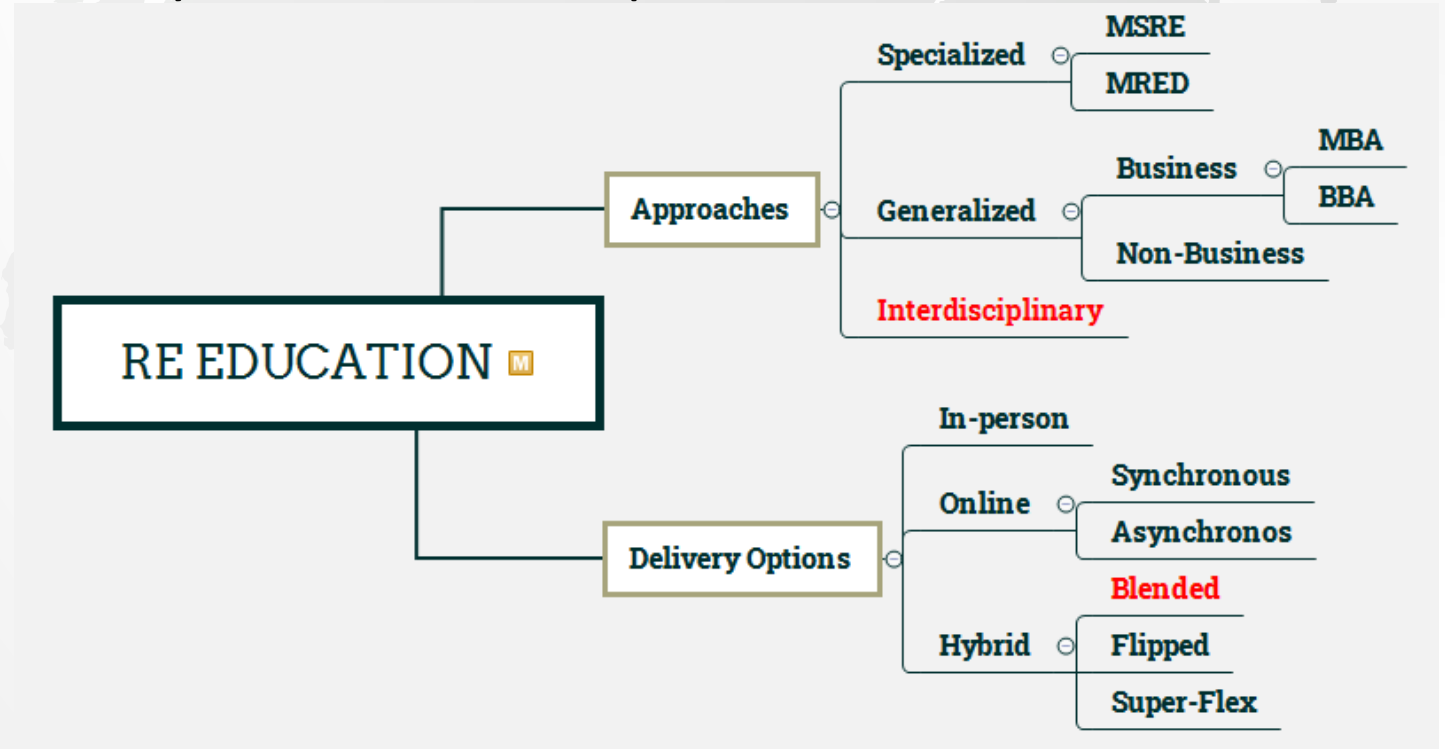**December 18, 2020**
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Presentation Preview

- **Format**
  - Original presentation in XMind 8
  - Converted to PowerPoint for Documentation
- **Topics**
  - Real Estate Education
  - Space-time/Money-time scope
  - Free Resources for Teachers

LESSONS LEARNED IN BLENDED TEACHING

RE Education

Free Resources for Teachers

Space-time/ Money-time
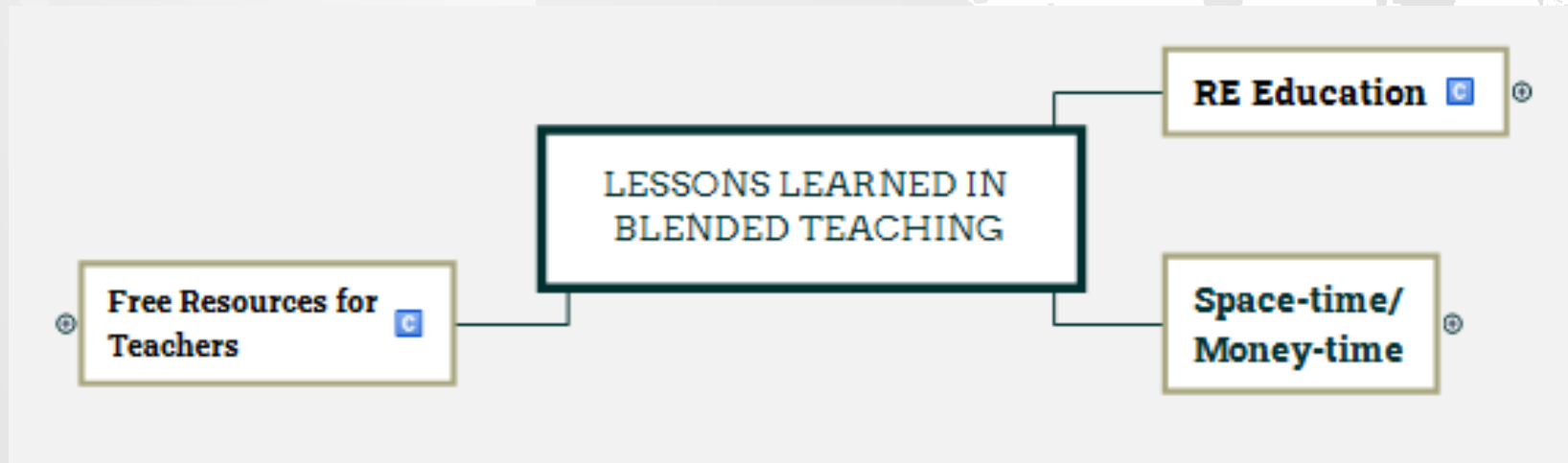
Educational Focus

- Approach: Interdisciplinary real estate education

- Delivery Option: Hybrid, blended in-person & on-line

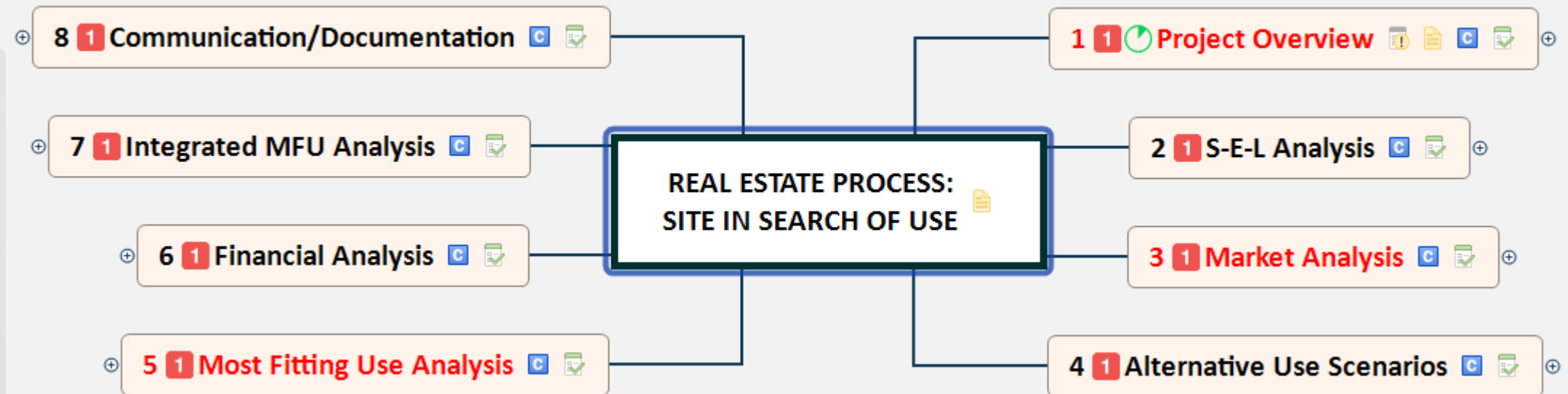# Lessons Learned Scope: Space-time, Money-time, Thinking Time

Space-Time: Real Estate Process

8 [1] Communication/Documentation

7 [1] Integrated MFU Analysis

6 [1] Financial Analysis

5 [1] Most Fitting Use Analysis

REAL ESTATE PROCESS:
SITE IN SEARCH OF USE

1 [1] Project Overview

2 [1] S-E-L Analysis

3 [1] Market Analysis
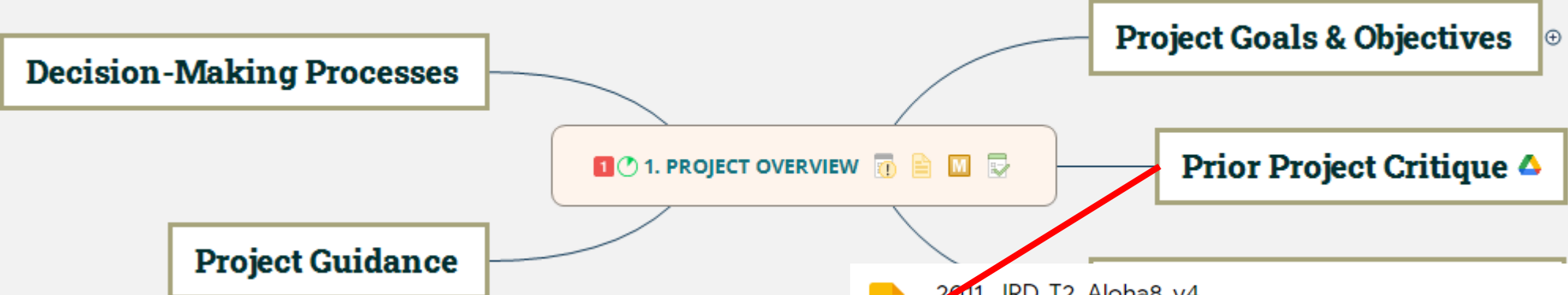
4 [1] Alternative Use Scenarios

Strategy
- *Introductory case-based course to raise awareness of the process and expose students to the breadth of inquiry.*
- *Mastery of Concepts in other courses in program.*

Space-time/ Money-time

Space-time: RE Process

Money-time: RE Finance

Thinking-time: Feasibility & Market Analysis

Project Overview: Prior Project Critiques

Decision-Making Processes

Project Goals & Objectives

1. PROJECT OVERVIEW

Prior Project Critique

Project Guidance

2011_JRD_T2_Aloha8_v4

Aloha 8
889 8th Ave N, Seattle WA, 98109

**Sustainable** Partners
Feasibility Study

Students critique prior projects for perspective and orientation.
Individual & team-building exercise.
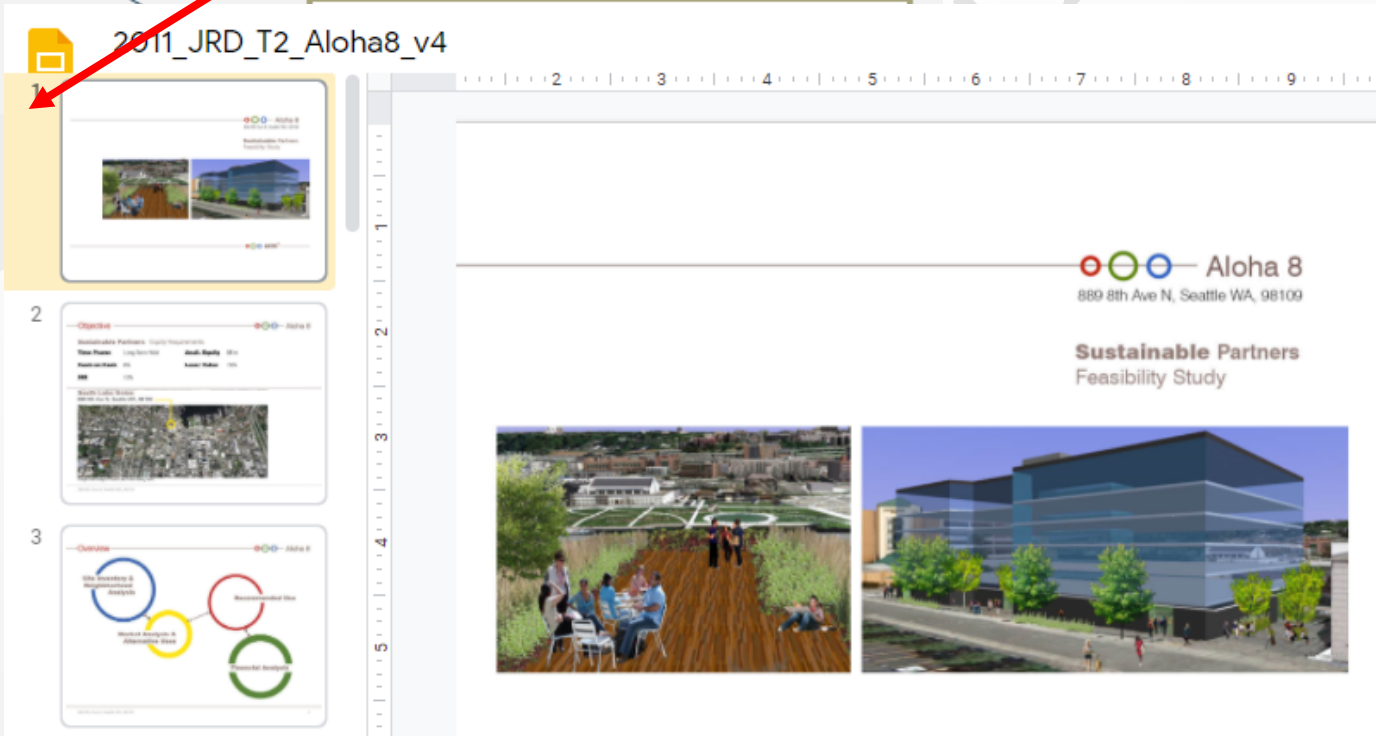
Space-time/ Money-time

Space-time: RE Process

Money-time: RE Finance

Thinking-time: Feasibility & Market Analysis

Spatial-Market Analysis

Summary of Market Analysis

Backdoor Analysis

Demand Analysis

Competitive Analysis

1 5. MARKET ANALYSIS M

Guide to Market Analysis
- Theory
- Applied

Macro-Analysis

Market Profile

Trade Area Delineation

Space-time/ Money-time
- Space-time: RE Process
- Money-time: RE Finance
- Thinking-time: Feasibility & Market Analysis
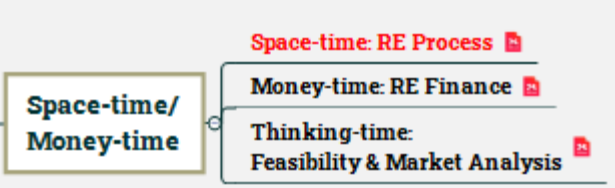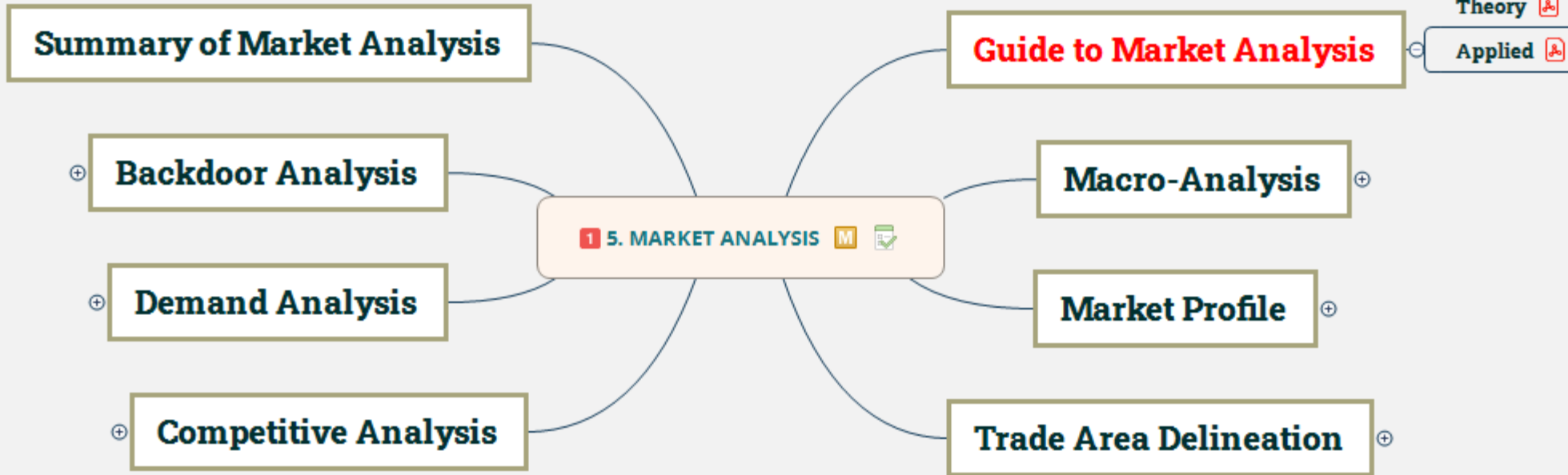
Asynchronous support materials:
- *Reading Modules: Market Analysis Theory & Application*
- *Tutorial: ESRI Business Analyst, CoStar*

Most Fitting Use Analysis

M-F-U Process ⊕

🔳 **6. MOST FITTING USE** Ⓜ 🗒

⊕ **BE-TRCm-FDBD Modeling**

Building Envelopes
Total Cost/ Value
Frontdoor Analysis
Backdoor Analysis
Residual Land Value

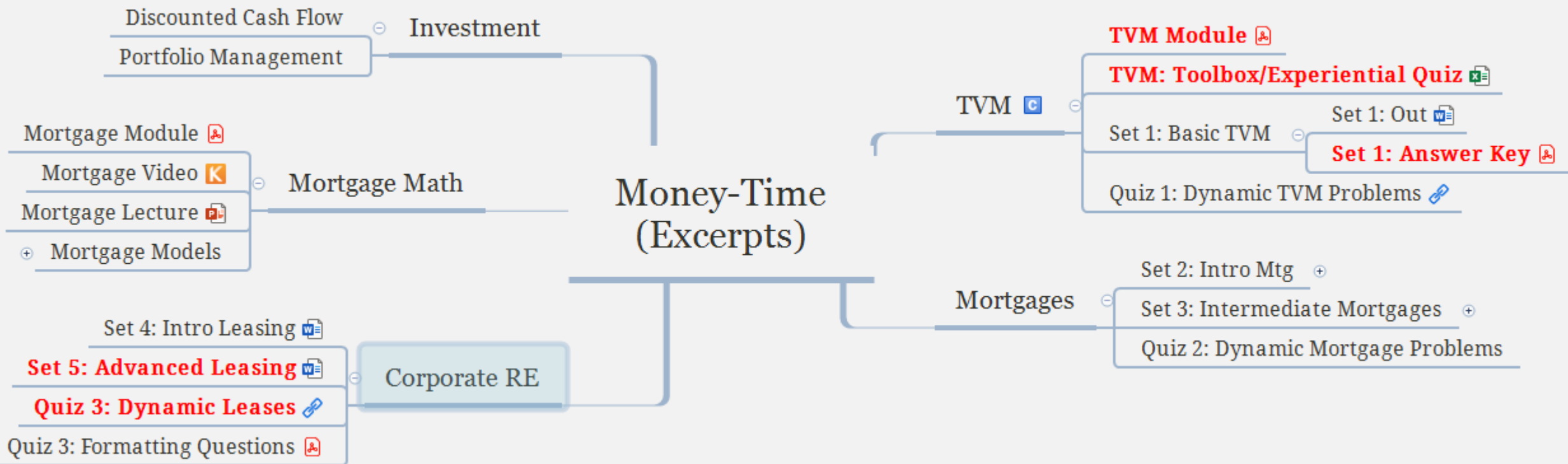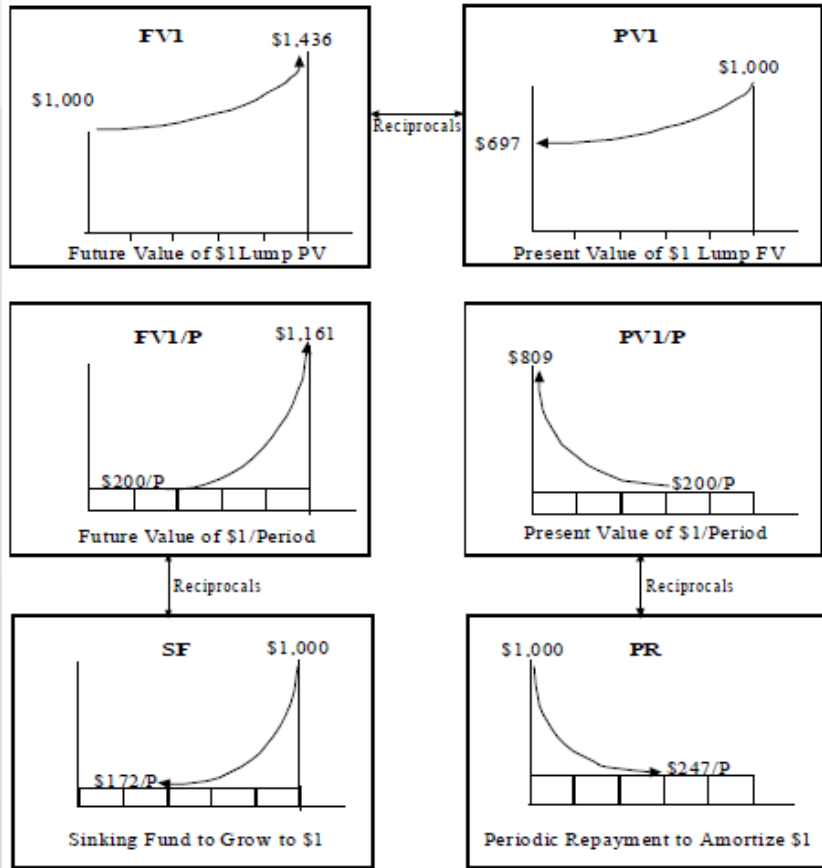| Component	Re-lease	Renovate	Low Rise	Mid-Rise	Code
Gross Income					
Building Income	$287,617	$352,833	$506,757	$1,450,815	$BI
Parking Income	$33,208	$44,277	$84,984	$122,893	$PI
Other Income	$0	$0	$0	$0	$OI
Gross Income Market	$320,825	$397,110	$591,742	$1,573,707	GI_m$
Building Vacancy	$44,915	$31,769	$35,504	$125,897	$Vac
Building Operating Expenses	$51,332	$47,653	$59,174	$125,897	$OExp
Building Property Taxes	$32,082	$39,711	$59,174	$157,371	$PTx
Building Reserve Ratio	$12,833	$7,942	$11,835	$31,474	$Res
Net Income Market	$192,495	$277,977	$437,889	$1,164,543	NI_m$
Total Replacement Cost Justified	$2,169,346	$3,480,414	$5,786,168	$15,187,346	TRCj
Fully loaded TRCj/Building SF	$ 94.07	$ 150.92	$ 294.13	$ 213.55	FLC/BSF

Experiential & Asynchronous materials:
- *Reading Module: Most Fitting Use*
- *Integrated Building Envelope, Cost & FD/BD Models*

Space-time: RE Process 📄
Money-time: RE Finance 📄
Thinking-time: Feasibility & Market Analysis 📄

Space-time/ Money-time

Money-Time: Real Estate Finance

Time Value of Money: Foundational Learning

TVM: Experiential Learning

Intro Problems

Contents

Problem 1. Traditional Mortgage

a. Purchase of Entry-level House

Assume you are seeking to buy an "entry-level" house that is available from the builder for $200,000. Currently, you can get an 80% loan, at 7.35% with a 30 year amortization. How much could you borrow? What would your monthly mortgage payments be?

Click here for Answer 1 (a)

A.   **Problem Visualization**

Purchase Price
$200,000
x 80% LV
PV
$160,000
Nom% = 7.35
PMT = $1,102.36mo
t = 30 years
N = 360
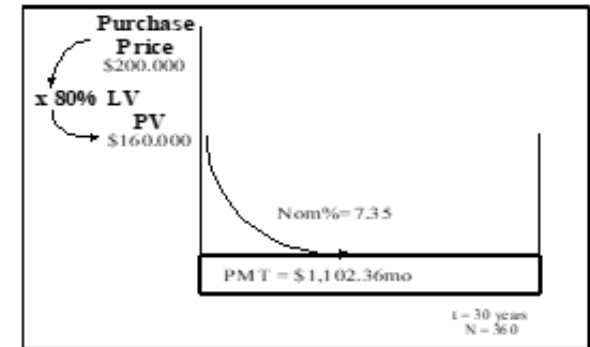
B.   **Using the HP 10BII**

hp10BII: P/YR=12, X P/YR=30, NOM%=7.35, PV=160,000, Press PMT

C.   *Excel Approach*

Factor	Code	Initial	Answer
Compounding/Period	m	12	
Term	t	30	
Present Value	PV	$160,000	
Payment	PMT		$1,102.36
Future Value	FV	$0	
Interest Rate	I	7.35%	

Click here to return to Problem 1 (a)

Space-time/
Money-time

Space-time: RE Process
Money-time: RE Finance
Thinking-time:
Feasibility & Market Analysis

Dynamic Assessment: Formula-based Quizzes

- *Philosophy: Mastery learning (achievement vs. speed)*
- *Implementation: Calculated Questions in CANVAS, BB*
  - *Problem Statement - Vector of inputs - Formula Response*
- *Unlimited Attempts: Highest Score is Grade*

Problem Statement

When you moved to Kansas City some [n] years ago, you bought a house for $[p] in southern Johnson County. You financed the property with a [lv]% loan-to-value ratio on a permanent loan at [i]% with [m] payments per year with a term of [t] years. Assume the house appreciated at [ap]% annually and your selling expenses would be [se]% of the sales price. If you sell at the end of the [n]th year from purchase, pay off the outstanding mortgage balance, and apply the net sales proceeds to a downpayment and income is not a constraint given your successful career, how much could you afford to pay for a new house assuming a [lv]% loan-to-value ratio?

Variable Definitions

Variable	Min	Max	Example Va
n	6	12	8
p	220,000	300,000	273,145
lv	80	83	82
i	5.5	7.5	5.83
m	12	12	12
t	30	30	30
ap	2.2	3.5	2.25
se	6	8.5	7.24

Formula Definition

Formula

$$((((p*((1+(ap/100))^{(n)}*(1-(se/100))))-((p*lv/100)*((i/100)/m)/(1-(1/(1+(i/100)/m)^{(t*m)})))*(1-(1/(1+(i/100)/m)^{((t-n)*m)}))/((i/100)/m)))/(1-(lv/100))$$

Result

= 593,561

Generate Possible Solutions

Offer **40** possible value combinations (max 200)

allow an error margin of +/- **2%**   Generate

n	p	lv	i	m	t	ap	se	Final Answer
8	248,888	82	6.46	12	30	3.39	7.27	669,666 +/- 2%
10	236,126	80	5.94	12	30	2.74	7.81	637,097 +/- 2%
10	273,429	80	5.94	12	30	3.28	6.35	854,197 +/- 2%

Space-time/ Money-time

- Space-time: RE Process
- Money-time: RE Finance
- Thinking-time: Feasibility & Market Analysis

Dynamic Assessment Example

Question 4   0 / 10 pts

When you moved to Kansas City some 11 years ago, you bought a house for $268,303 in southern Johnson County. You financed the property with a 82% loan-to-value ratio on a permanent loan at 7.00% with 12 payments per year with a term of 30 years. Assume the house appreciated at 2.90% annually and your selling expenses would be 7.13% of the sales price. If you sell at the end of the 11th year from purchase, pay off the outstanding mortgage balance, and apply the net sales proceeds to a downpayment and income is not a constraint given your successful career, how much could you afford to pay for a new house assuming a 82% loan-to-value ratio?

You Answered
425,800

Correct Answer
871,916   margin of error +/- 2%

Immediate
Feedback & Hints

Go back to Module 1: Introduction to TVM. Also, refer to Experiential Problem Set for hints. Take a careful look at the problem statement and make sure you visualize the problem so you see all the phases. Good luck and keep on trying.

Space-time: RE Process
Money-time: RE Finance
Thinking-time:
Feasibility & Market Analysis

Space-time/
Money-time

Philosophy: Mastery Learning
- *Step 1: Student Takes Quiz*
- *Step 2: If correct stop; if wrong*
  - *Review Correct Answer*
  - *Refer to support materials & hints*
  - *Repeat with new inputs and answers*
  - *Continue until get desired grade*

NOTE: These types of problems are available in Moodle, Blackboard, Canvas and other LMSs.

Generate Possible Solutions

Offer [40] possible value combinations (max 200)

allow an error margin of +/- [2%]   [Generate]

n	p	lv	i	m	t	ap	se	Final Answer
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Thinking-Time: Feasibility & Market Analytics

Overview

Project 5: Real Estate Futures 🄲

Feasibility & Market Analytics

Project 1: 3Cs of Value

Project 2: Analytics 🄲

Project 4: Inter-urban Market Analysis

Project 3: Intra-urban Market Analysis

Space-time/Money-time

Space-time: RE Process 🗷

Money-time: RE Finance 🗷

Thinking-time: Feasibility & Market Analytics 🗷

*Philosophy: Real Estate is a Behavioral Science – Thinking is Key*
- *Critical and design thinking is essential to market success*
- *Analytics is key to supporting decision-making*
- *Must have a vision of the future for sustainable decisions*

Embedding Analytics in Real Estate Education

Real Estate Revolution

Analytics

Tableau
- Overview
- **Tutorial**
- Video
- **Assignment**

Alteryx
- Overview
- Tutorial
- Assignment
- **Example**

Space-time/ Money-time
- **Space-time: RE Process**
- **Money-time: RE Finance**
- **Thinking-time: Feasibility & Market Analytics**

Philosophy: Analytics is a means to an end, not an end in itself

Strategy
- *Raise awareness of the big data/analytics revolution*
- *Integrate analytics into existing courses and problems*
  - *Tableau for Visualization*
  - *Alteryx for big data and predictive analytics*
  - *GIS-based packages for spatial (e.g., ESRI, CoStar, GeoDa)*
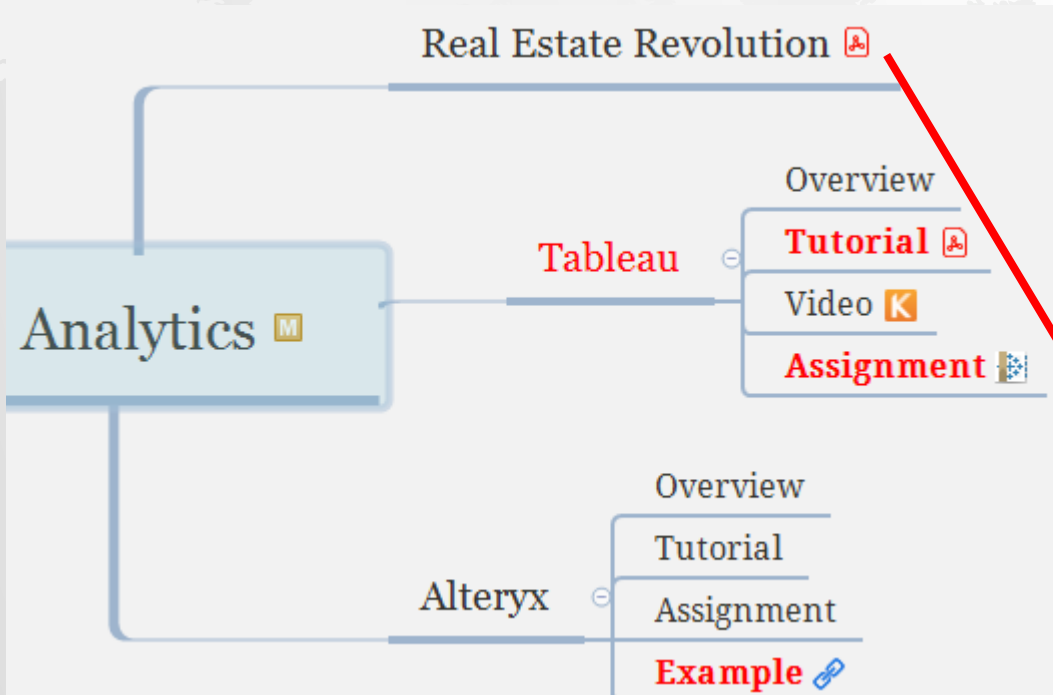
The big data regime shift in real estate

The big data regime shift in real estate

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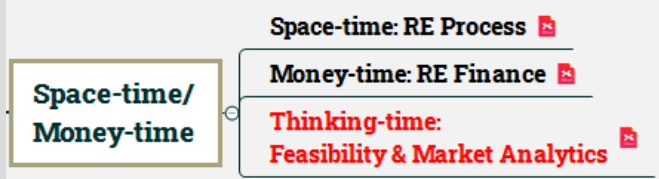
Data Visualization in Real Estate Education: Tableau

Tableau Tutorial: Dashboard Creation and Publication

An Applied Case Using Kansas City MO Open Data

+ableau

Excerpts from

Real Estate Feasibility Analysis: An Analytical Approach

James R. DeLisle, Ph.D.

Strategy
- *Prepare asynchronous, customized tutorial materials*
- *Integrate Tableau Visualizations in existing courses/projects*
  - *RE Process: Trade Area and Competitive Analysis*
  - *RE Finance: Strategic Portfolio Planning*
  - *Feasibility & Market Analytics: Spatial Analysis*

US Real Estate Degree Programs
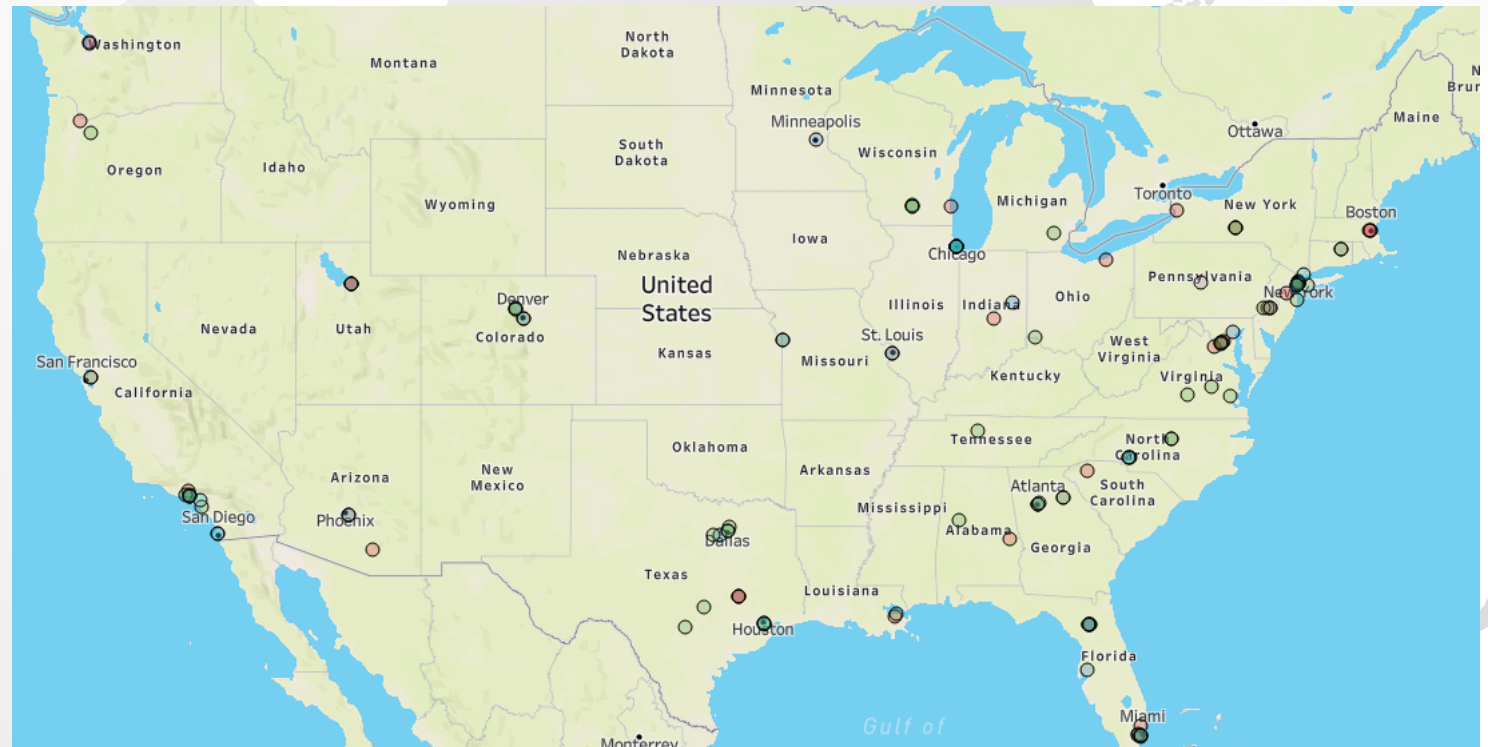
Space-time/ Money-time	Space-time: RE Process
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Data Analytics in Real Estate Education: Alteryx
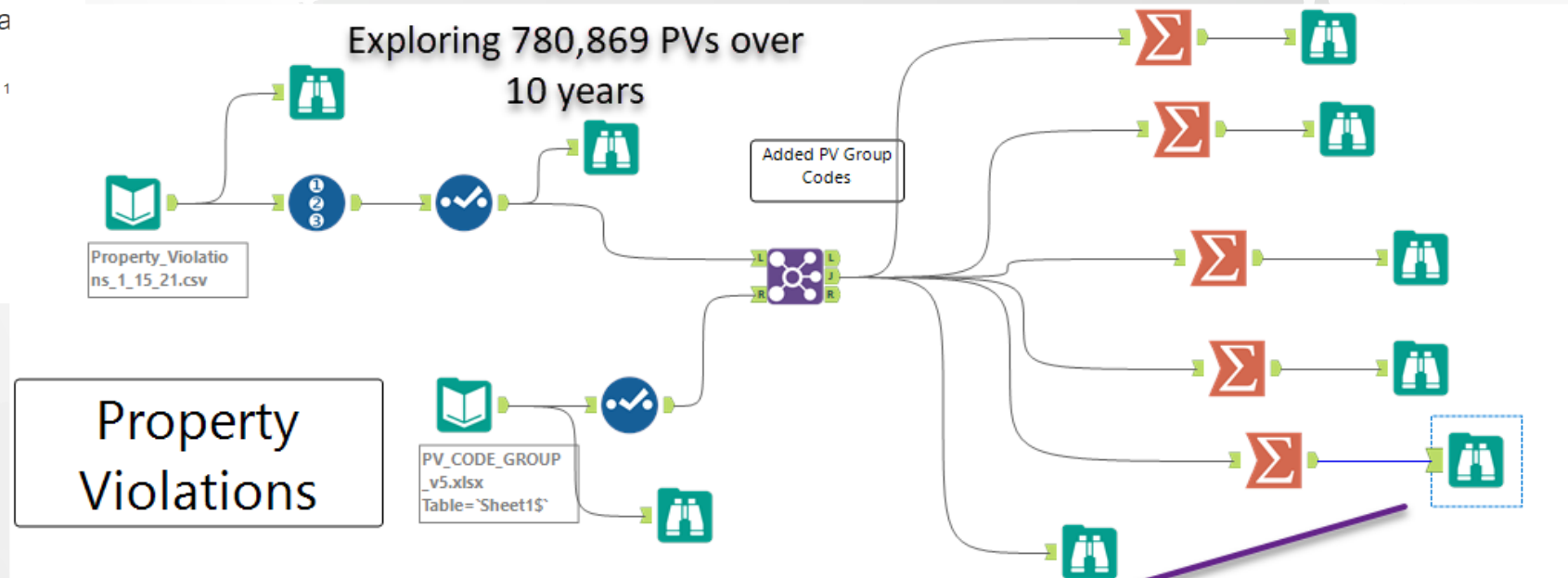
Infusing Future Thinking in Real Estate Education
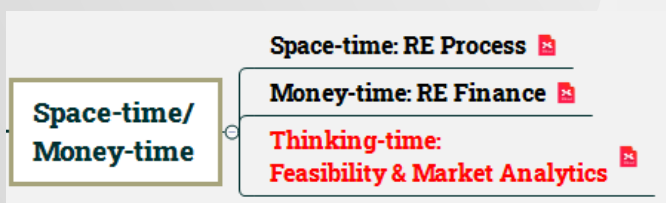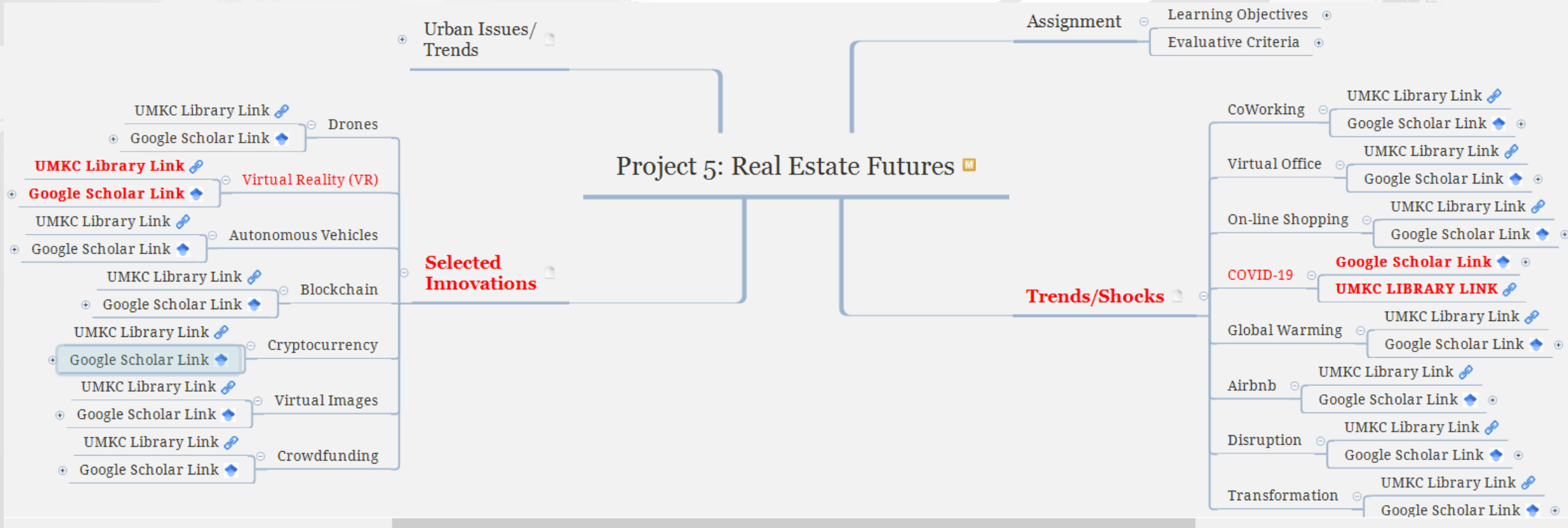
Philosophy: Analytics is a means to an end, not an end in itself
Strategy
- *Raise awareness of the big data/analytics revolution*
- *Integrate analytics into existing courses and problem)*

Free Analytics & Viz Resources for Academics

Alteryx for Good. The "Alteryx for Good Program" provides Alteryx licenses for verified academics, students, and non-profits. By integrating Alteryx in real estate and other academic programs, faculty can provide students with a competitive edge in terms of cutting-edge analytics.

<-- Click for link to Alteryx for Good

Tableau for Teaching. Tableau has established free licenses for students and instructors to encourage adoption of its software. The program requires verification of academic status. The free licenses are available for Tableau, as well as Tableau Prep.
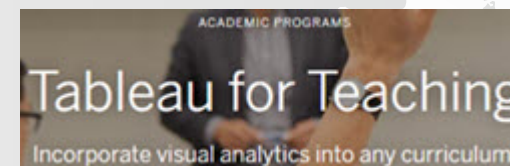
<-- Click for link to Tableau for Teaching

For more packages, examples, and tuturials, go to my personal website for Analytics & Vizzes.

Lessons Learned Recap (aka: Lessons Being Learned)

Offering Multi-channel Content
Embracing Mastery Learning
Engaging in Team-based Learning
Applying Critical Path Working
Incorporating Peer-based Learning

Lessons Learned: Space-time

Lessons Learned: Money-time
- Offering Multi-channel Content
- On-boarding Students w/o Prerequisites
- Engaging in Mastery Learning
- Balancing Individual/Team-based Learning
- Building Foundations of Knowledge

Thinking can be "Learned"
Balancing Theory & Application
Integrating Analytics
Mining Peer-based Learning

Lessons Learned: Thinking-Time

We are at the beginning of a revolution in real estate and education; there's so, so much to learn…

Resilient Learning
Hidden Costs of Innovation
Trade-offs: Substance vs. Form?
Necessity is the Mother of Invention
Global Problem --> Global Collaboration

Lessons "Being Learned"