Minnesota State University
MANKATO

Providing a Context for Learning Using Problem-Based Learning and Assignment Scaffolding
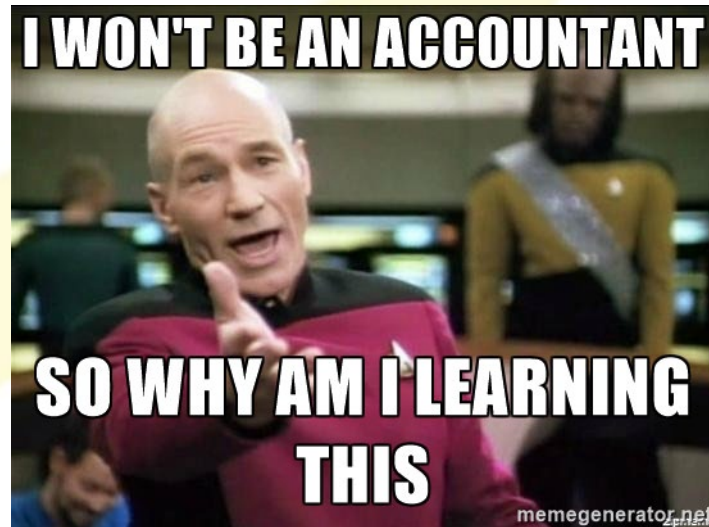
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IT Solutions

Minnesota State University, Mankato

WHY AM I LEARNING THIS?

- What does it have to do with me?
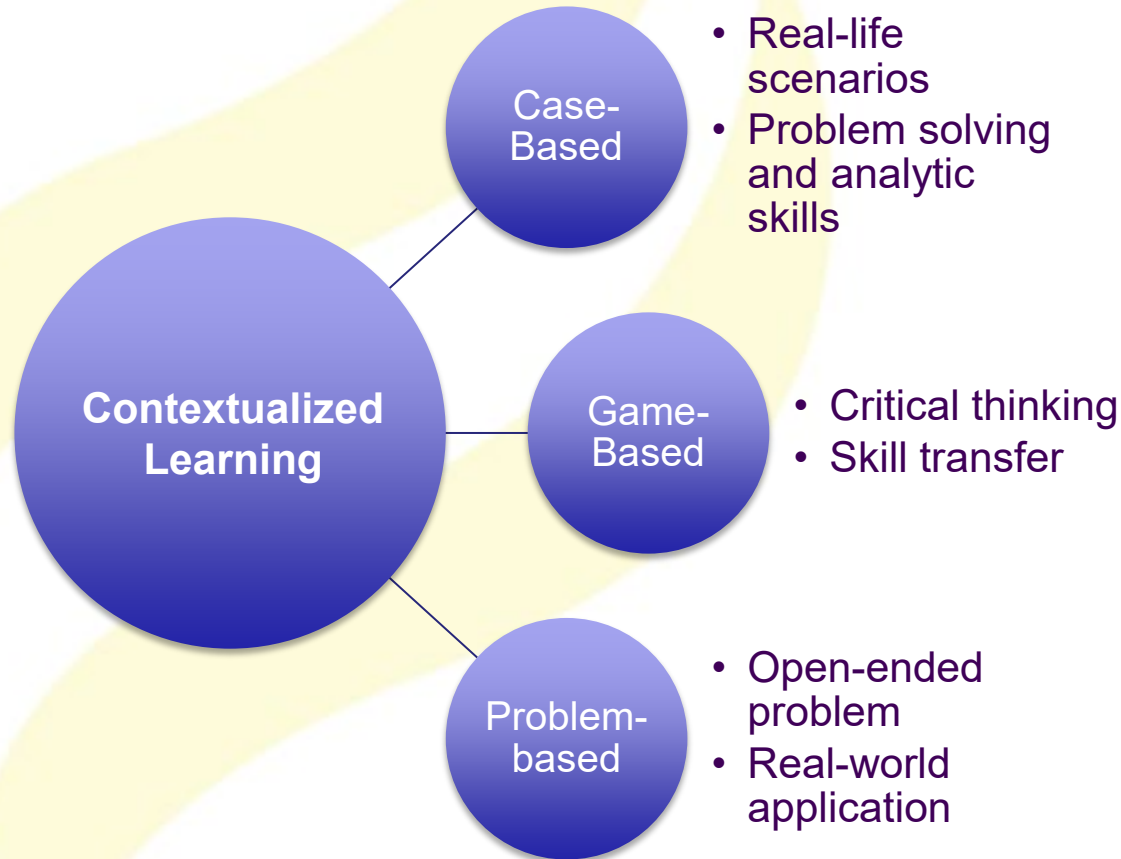- Am I ever going to use this?
- When am I ever going to use this?

Contextualized Learning

In Class

Real Life

Learning

Application

Problem-Based Learning

Contextualized Learning

Case-Based
- Real-life scenarios
- Problem solving and analytic skills

Game-Based
- Critical thinking
- Skill transfer

Problem-based
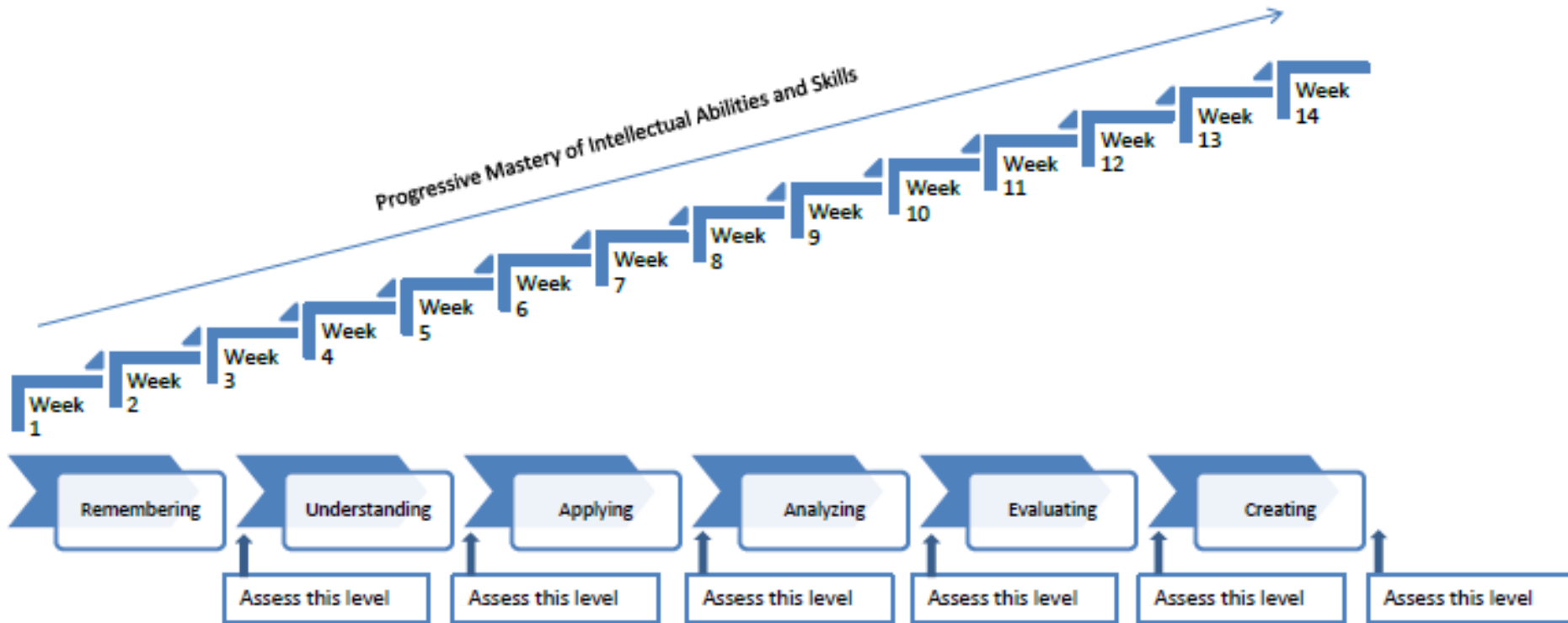- Open-ended problem
- Real-world application

PBL

1. What do we know about this problem?

2. What Information do we need to know\learn to solve the problem?

3. How do we acquire the needed information?

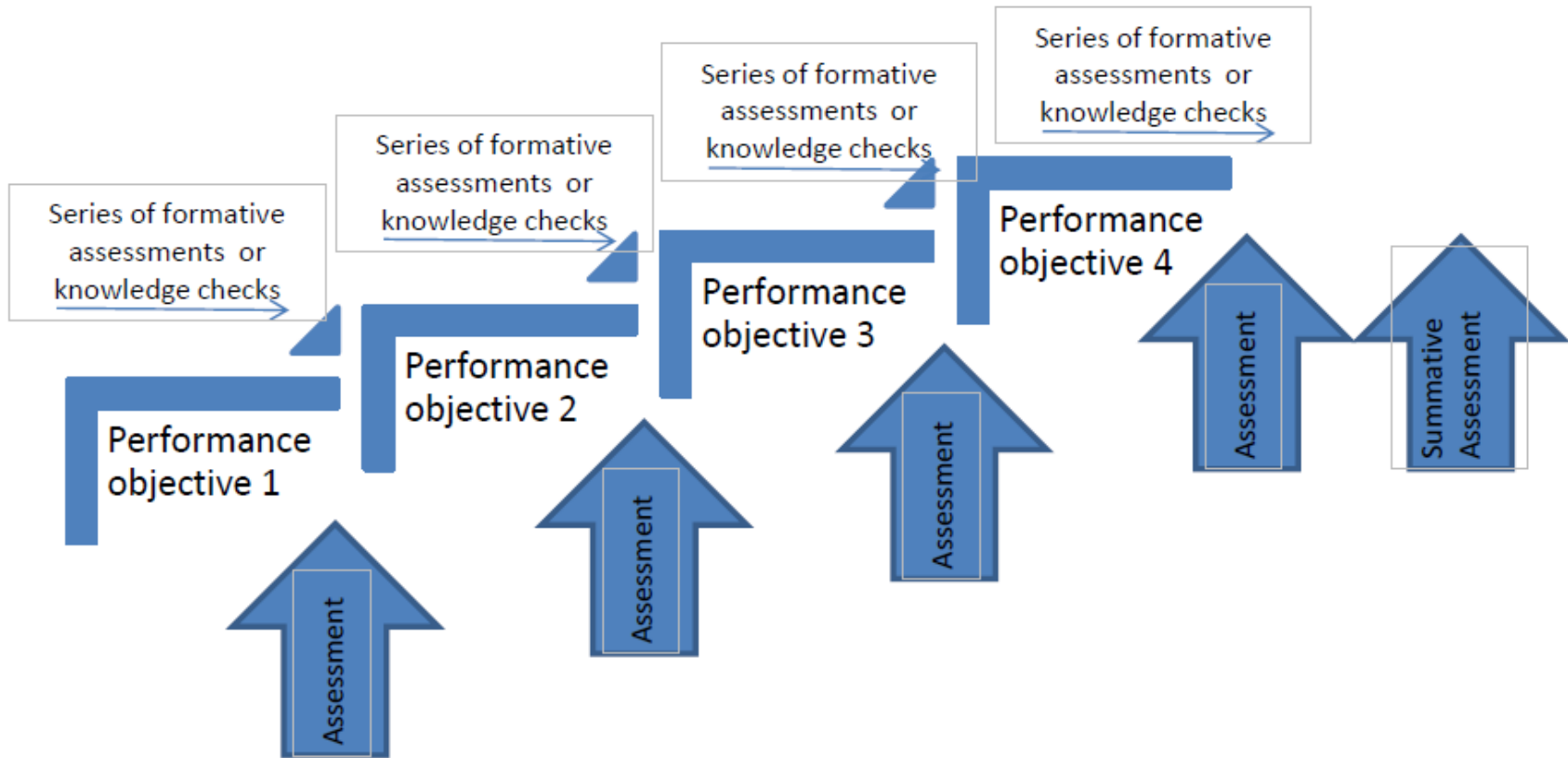4. Based on steps 1 thru 3, how do we apply\solve the problem?

PBL Problem Example

Your local university wants to increase the technology use on campus but they aren't sure what the most useful or popular devices are.

Scaffolding

Scaffolding

Providing Context for Learning through PBL

Announcements | ▽ ⌄

Welcome teachers! ▾ ✕

Posted May 10, 2016 11:35 AM

Welcome Carrie!

I'm glad you've decided to join us on this project! We need all the help we can get!

As you know, District 99 is looking to expand. We want to build a new school with a game-based curriculum, much like Quest2learn in New York. In the interests of space and money, we would like to take advantage of one of the older school buildings around town. This is an exciting opportunity for us! That is why I need you to go check out the school. Look around, go into some of the classrooms and see if the buildings would be a good fit for our school. Remember, the new school will be a game-based curriculum, so keep your eyes open for potential games, gamification and simulation ideas. I am considering all of you for positions at this new school, so I need to make sure you know enough about games and simulations to support the game-based curriculum we are proposing. I will give you regular tests to see if you can handle a position at our game-based school.

Report back to me at regular intervals. Go ahead and read the Necessary Information contract and we can get started!

I'll expect to hear from you soon,

Superintendent Miller

Show All Announcements

Alignment

Objective	Assessment	Badge
Identify game and simulations projects for thematic units, lessons, trainings, and other technology-rich, inquiry-based learning opportunities.	Identify the game or simulation you have chosen to play. Give a brief description, link/URL (if any), and explain why you chose it.	GAME IDENTIFIER
Evaluate game and simulations projects for thematic units, lessons, trainings, and other technology-rich, inquiry-based learning opportunities.	Evaluate the game or simulation you have chosen to play. What are the pros and cons of this game or simulation?	GAME EVALUATOR
Select game and simulations projects for thematic units, lessons, trainings, and other technology-rich, inquiry-based learning opportunities.	Select two new games or simulations to play this week. Then compare them to the the game or simulation you have been previously playing.	GAME SELECTOR
Use game and simulations projects for thematic units, lessons, trainings, and other technology-rich, inquiry-based learning opportunities.	Create a lesson plan for your content area that incorporates a game or simulation.	GAME USER
Adapt game and simulations projects for thematic units, lessons, trainings, and other technology-rich, inquiry-based learning opportunities.	How could you take a commercial game (one not designed for educational purposes) and adapt it for classroom use?	GAME ADAPTER

Keeping the context

Games and Simulations Graphic Organizer

Add Due Date

Let's get organized! We know that we want to create a game-based curriculum. But what options are out there that we could adopt? We don't want to do everything from scratch!

Do a web search for games and simulations that can be used for educational purposes. They do not necessarily have to be digital. See if you can find a minimum of 7 of each. If you could create a graphic organizer that lists each game and simulation, that would help me visualize our options. Please include a title and brief description for all 14 items so I know what I am looking at. If you could include a URL where applicable, I can look these up on my own.

Thanks!

☑ Make your report back to Superintendent Miller

Add Due Date

Reports back to Superintendent Miller

☑ Make your report back to Superintendent Miller   ×

Add Due Date

Reports back to Superintendent Miller

For this final report - is this site viable for the game-based school? Why or why not? What concerns, challenges or obstacles do you see for this new school model? What benefits will there be? Do you still want to work there?

Providing Context

Our community in Arizona is very diverse, with a rich history. As part of an effort to stimulate the economy, a state senator would like to propose job solutions to help put people back to work. To do this, information is needed on the local community – Who are they? What are their ethnic, religious, and socio-economic backgrounds? What are the most pressing economic issues facing this population? What types of jobs would be the most beneficial for this community? The senator has asked you and your team to put together an analysis of our community, defining the community, explaining relevant information, and presenting an argument for the most pressing economic needs of the constituents.

Scaffolded Learning Objectives

Cognitive Domain	Corresponding Learning Objective
Applying	1. Apply various invention, drafting, and revising/ editing strategies
	2. Demonstrate a theoretical understanding of rhetorical context (that is, how reader, writer, language, and subject matter interact)
	3. Uses a voice appropriate to the topic selected and the rhetorical situation
	4. Correctly applies the conventions of Edited Standard Written English (ESWE).
	5. Demonstrate understanding of the nature of academic community, recognizing how conventions and forms of discourse vary among different disciplines.
Analyzing	6. Relate elements of the Benedictine heritage and Catholic tradition to their experiences.
Evaluating	7. Analyze and critique a variety of texts, including academic discourse, to evaluate diverse views.

Aligned Assessments

Checkpoint Assignment	Objective Assessed
Reactions to readings	1,4
Definition Argument	2,4
Stylistic Essay	3,4
Proposal Argument	5,6
Evaluative Argument	7
8 Critiques x 10 points	4
Group Presentation	7

Let's kick it up a notch

Contextual Problem

Four friends have decided to start a company called *Muggle* to market and sell their product (called Woozles) online. They have brought your team in as IT consultants. From the ground up, you will help *Muggle* decide what types of computers and other technology they need, what their web requirements are, and what kind of support they will need as they grow.

Scaffolded Learning Objectives

Cognitive Domain	Corresponding Learning Objective
Understanding	1. Recognize the main components of information systems and computer systems 2. Explain computer connectivity, the wireless revolution, the Internet, and cloud computing. 3. Describe a system unit
Applying	4. Illustrate the most significant concerns for effective implementation of computer technology.
Analyzing	5. Differentiate between input and output. 6. Distinguish between system software and application software 7. Analyze existing information systems and evaluate the feasibility of alternative solutions
Evaluating	8. Propose a systems solution to a start-up company based on their individual needs

Aligned Assessments

Checkpoint Assignment	Objective Assessed
Information and Computing system components digital story	1
Computer connectivity, the wireless revolution, the Internet, and cloud computing blog assignment	2
System Unit Sketchup	3
Effective implementation of computer technology Podcast	4
Input and Output Tweet session	5
System software and application software glog	6
Muggle System Proposal	7,8

Contextual Problem

Congratulations! You and several other students have decided to open up a bakery on campus to provide your fellow students with nutritious and affordable food options. You must present a proposal to the University President that outlines your plan for this bakery, including the operating costs, a financial plan with short and long-term outcomes, a plan for staffing, a market analysis, and a budget for the first year of operation.

Scaffolded Learning Objectives

Cognitive Domain	Corresponding Learning Objective
Understanding	1. Identify characteristics of various types of costs.
Applying	2. Utilize different types of cost accounting systems. 3. Employ incremental analysis to make effective short-term decisions. 4. Apply capital budgeting techniques to make effective long-term decisions.
Evaluating	5. Prepare an operating budget and evaluate performance variances from the budget. 6. Propose a budget and financial plan for a new business

Aligned Assessments

Checkpoint Assignment	Objective Assessed
Costs Fact Sheet	1
Cost Accounting Case Studies	2
Incremental Analysis Flow Chart	3
Capital Budgeting Poster	4
Budget Board Meeting	5
Budget and Plan Proposal	6

Let's do one together

Managerial Economics MBA 611

Course Description:

Applies microeconomic tools to business decision making. Topics include optimization, consumer behavior, elasticity of demand, the use of regression analysis to estimate demand (revenues) and costs, marginal analysis and market structure.

Cognitive Domain	Corresponding Learning Objective
Remembering	• Define optimization
Understanding	• Explain the effect of consumer behavior on a given market
Applying	• Illustrate the elasticity of demand • Use regression analysis to estimate demand and costs • Solve optimization problems using marginal analysis
Analyzing	• Analyze the market structure of a given product market
Evaluating	• Propose a pricing strategy for a given product based on a market analysis

My Contextual Problem for MBA 611

You are a market analyst for Microsoft, working in the Xbox support division. The powers that be have decided to launch a new game platform for the 2015 Christmas year in order to compete with the Playstation platform that is scheduled for the same release date. Based on previous platform releases (Xbox, Xbox 360, Xbox 1; Playstation 2, 3, and 4) develop a pricing strategy for this new product and the accompanying launch games. You will produce a portfolio for your boss that includes a description of the product and games to be released, an analysis of Playstation's likely marketing strategy and pricepoint, and your recommendations for pricing based on the market demands, costs to produce, optimization and consumer behavior.

Aligned Assessments

Checkpoint Assignment	Objective Assessed
Regression Analysis	4
Marginal Analysis	5
Market Structure Analysis	6
Pricing Strategy Portfolio Presentation	1,2,3,7

THANK YOU!

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