

GAMIFICATION

A DIFFERENT PARADIGM OF PEDAGOGY

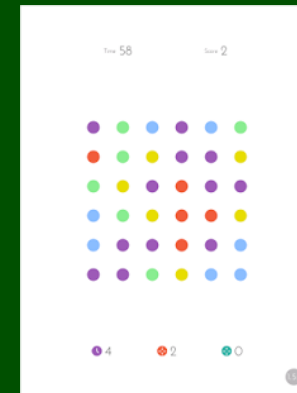
Katrin Becker

5: Thur. May 15 11:30-12:30

Outline

1. What am I playing now?
2. A New Paradigm of Education?
3. How Does Gamification Fit?
4. Gamification is NOT New
5. Gamification IS New
6. Is Gamification a Different Paradigm?
7. Resources

What am I playing Now?



What are Schools For?

- Childcare so parents can work.
- Socialization (Entrainment to authority)
- Creation of an efficient underclass of workers.
- Teaching Good Test-Taking Behavior
- Schools are:
 - hierarchical
 - authoritarian
 - do not encourage personal agency

Brenda Laurel

A New Paradigm?

Agriculture

- permanence
- communities
- specialization
- extended families
- slow transportation

Industrial

- mobility
- urbanization
- mechanization
- nuclear family
- rapid transportation

Information

- extreme mobility
- urban > rural
- jobs shift
- family dispersal
- massive & rapid

A New Paradigm in Education?

Agriculture

- 1-on-1
- personalized
- apprenticeship
- 1-room school house

Industrial

- mass education
- age-determined
- trade schools
- **current system**

Information

- ???
- ???
- ???
- ???

A New Paradigm in Education?

- To understand what features an information-age educational or training system should have . . .
- We must first understand the changing needs and conditions of the emerging information society.

Reigeluth, C. M., & Karnopp, J. (2013). *Reinventing schools : it's time to break the mold*. Lanham: Rowman & Littlefield Education.

A New Paradigm in Education?

Industrial Age

- Bureaucratic organization
- Autocratic leadership
- Centralized control
- Adversarial relationships
- Mass production, etc.
- Compliance
- Conformity
- One-way communications
- Compartmentalization
(Division of Labor)

Information Age

- Team organization
- Shared leadership
- Autonomy, accountability
- Cooperative relationships
- Customized production, etc.
- Initiative
- Diversity
- Networking
- Holism (Integration of tasks)

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A New Paradigm in Education?

problem-solving	vs	factual knowledge
cooperation	vs	competition
initiative	vs	compliance

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A New Paradigm in Education?

- General Features:
 - People learn at different rates – adapt to them

Sorting	vs	Learning
Time-based	vs	Attainment-based
Group-based	vs	Person-based
Teacher-based	vs	Resource-based

A key: The report card

Reigeluth, C. M., & Karnopp, J. (2013). *Reinventing schools : it's time to break the mold*. Lanham: Rowman & Littlefield Education.

What Needs to Change?

- A. Different Paradigm of Pedagogy (Instructional Technology)
- B. Different Roles for students, teachers, and technology.
- C. Different roles for instructional designers
- D. Different structure of educational systems

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Different Paradigm of Pedagogy

- Students learn at different rates.
- Student progress is
 - attainment-based
 - customised
- Project Based
- Tutorial

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Different Roles

- For Students:
 - active
 - self-directed
- For Teachers:
 - designers
 - facilitators
 - mentors

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Different Roles for Technology.

- Student Learning:
 - record-keeping
 - planning
 - instruction
 - assessment

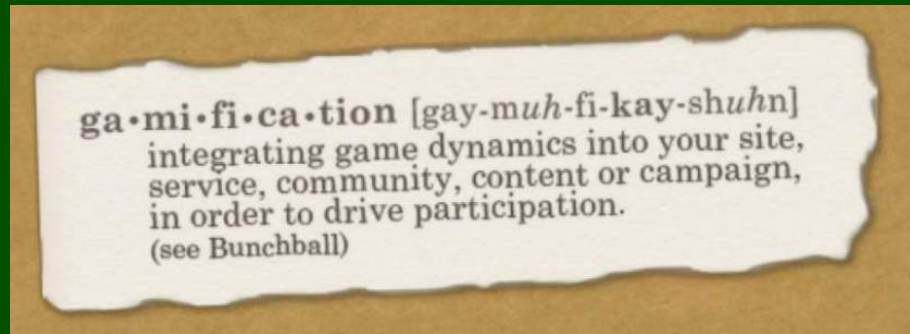
Reigeluth, C. M., & Karnopp, J. (2013). *Reinventing schools : it's time to break the mold*. Lanham: Rowman & Littlefield Education.

Different Structure of Educational Systems

No Grade Levels	→	Continuous Progress
No Courses	→	Projects, Attainments
No Grades	→	Inventories of Attainments
No Classrooms	→	Studios, Collaboration Contexts

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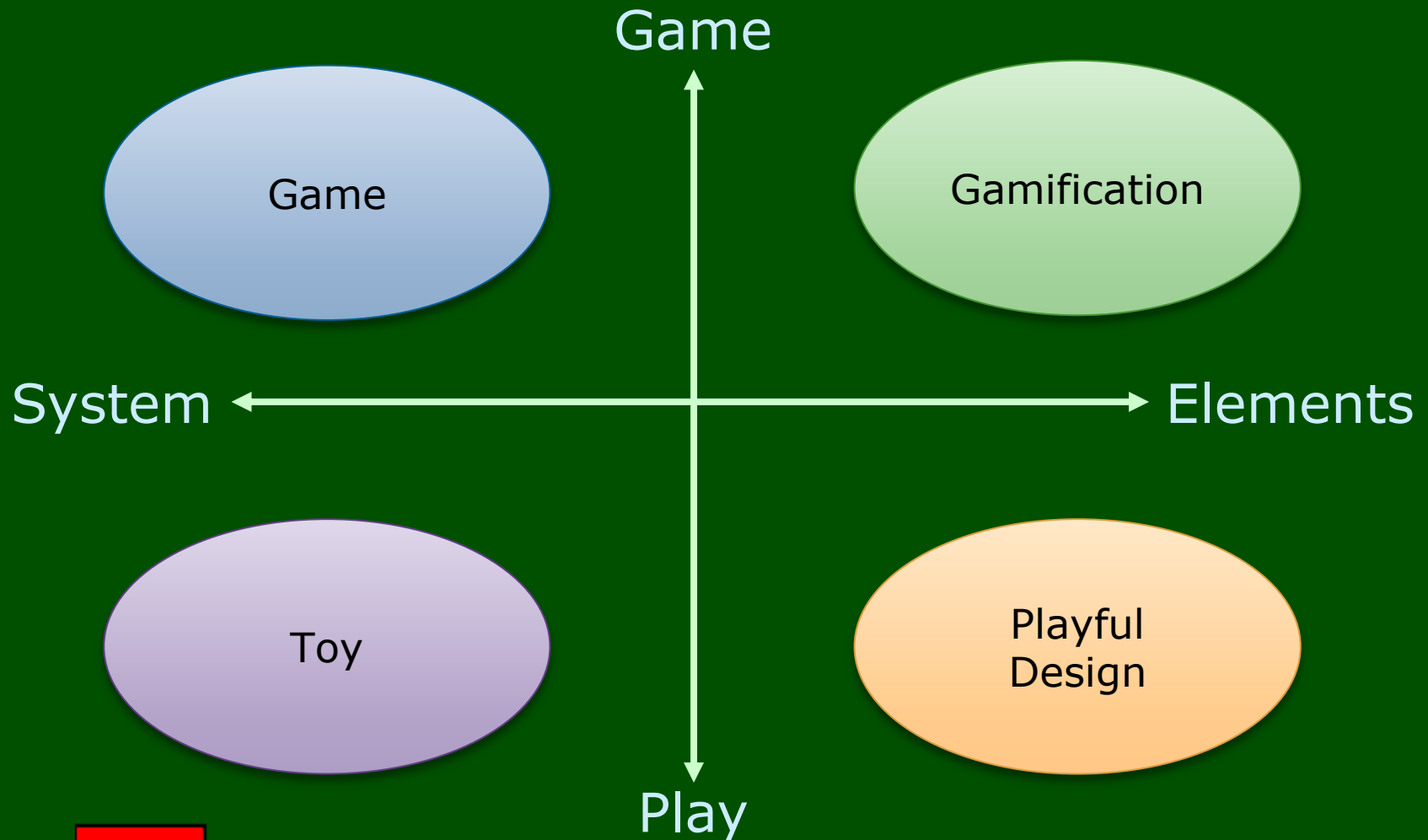
How Does Gamification Fit?



The use of game elements
in non-game contexts.

Deterding, S. (2012). 9.5 Theses on the Power and Efficacy of Gamification. Microsoft Research. [Microsoft Research Video] Retrieved from <http://research.microsoft.com/apps/video/dl.aspx?id=174677&l=i> on 12 October 2012.

Gamification

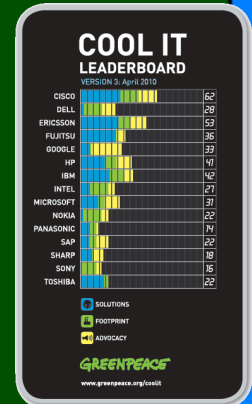


Playing vs Gaming

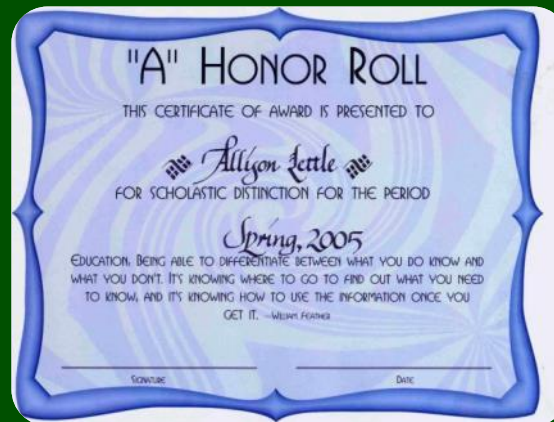
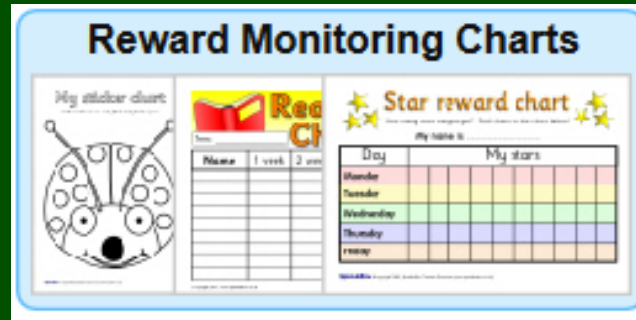


ifferent Paradigm of Pedagogy

Game Systems vs Game Elements



Gamification is NOT New



Gamification IS New:

- Flexible Path
 - Must earn 'N' XP.
 - Here are 'M' things
 - totalling $>N$ XP (*important*)
 - Must do at LEAST these: _____
 - The rest is up to you.

Gamification IS New:

Competency Driven

- Quests → activities; things to DO
- Focus on:
 - Activities that match objectives
 - How learners can demonstrate competence

Gamification IS New:

Accumulative Grades

Welcome to class

..... you all have ZERO

- Everything the learner does for points ADDS to the total.
- NOTHING the learner does can lower their score.

Back to Reigeluth's Different Paradigm of Pedagogy

- Structure of Educational Systems
- Student Progress
- Student Work
- Student & Teacher Roles
- Roles for Technology

Different Structure of Educational Systems

No Grade Levels → Continuous Progress

No Courses → Projects, Attainments

No Grades → Inventories of Attainments

No Classrooms → Studios, Collaboration Contexts

Different Structure of Educational Systems

No Grade Levels → Continuous Progress

1103 Leaderboard

Week	1	2	2	3	3	4	4.1	5	6	7	7.5	8	8.5	9	9.5	10	11	11	12	12	13	13	14	14	14.5	End Game	FINAL GRADE
(date posted) Current mean	Sept 12 18	Sept 18 21	Sept 21 23	Sept 23 27	Sept 27 30	Sept 30 Oct 3	Oct 3 Oct 7	Oct 14 14	Oct 21 21	Oct 24 24	Oct 28 28	Oct 31 31	Nov 4 4	Nov 6 6	Nov 11 11	Nov 15 15	Nov 18 18	Nov 21 21	Nov 25 25	Nov 28 28	Dec 2 2	Dec 6 6	Dec 9 9	Dec 13 13	Dec 22 22		
XP	40	50	80	110	150	175	200	270	340	370	400	435	470	500	540	580	620	660	700	740	780	820	850	850	1000+		
Level	0	0	0	0	0	0	0	1	1	1	1	2	2	2	3	3	4	5	5	8	8	10	10	12	12	13	
where you should be																											
1	40	50	71	71	99	99	135	231	231	235	369	429	459	459	577	722	722	769	769	824	916	936	952	952	956	1165	A+ 1,165
2	40	40	50	55	95	95	134	164	170	231	280	325	350	447	509	622	647	716	726	794	903	903	903	923	952	1127	A+ 1
3	30	40	50	50	75	93	130	160	164	204	251	322	332	382	459	572	604	670	672	726	820	870	880	880	923	1044	A+ 1
4	30	40	50	50	71	87	128	138	160	194	235	307	327	350	439	509	592	657	670	695	789	839	870	870	897	1003	A+ 1
5	30	30	50	50	67	75	99	117	139	160	197	245	307	332	332	449	474	474	597	607	767	767	789	789	890	956	A+ 1
6	30	30	49	50	67	71	89	99	138	151	194	235	256	256	256	363	363	459	474	506	605	605	767	767	870	925	A 1
7	20	30	40	50	65	69	87	99	117	148	186	197	255	255	255	275	314	400	400	400	545	576	630	685	789	924	A 1
8	20	30	40	50	50	67	87	97	99	109	141	171	244	244	244	244	329	359	397	482	502	527	527	695	890	A 1	
9		30	40	49	50	65	67	70	97	97	103	146	146	181	204	244	244	244	268	359	476	475	475	475	638	853	A 1
10		30	40	40	50	60	65	67	67	67	85	103	103	107	191	191	191	201	244	244	333	383	428	428	603	769	B 1
11		20	40	40	50	50	65	65	66	81	85	87	85	103	103	103	103	189	189	239	328	328	328	328	413	551	D+ 1
12			40	40	50	50	50	50	65	67	67	85	85	85	85	85	85	85	124	189	267	267	267	267	349	530	D 1
13			40	40	40	50	50	50	50	58	58	58	67	67	67	75	75	85	85	172	264	264	264	264	267	374	F 1
14			30	30	30	47	47	47	47	50	50	50	60	60	60	67	67	58	85	85	134	134	134	134	264	349	F 1
15						30	40	40	40	40	40	40	58	58	58	58	58	50	58	85	85	85	85	85	85	178	F 1
16						20	37	37	37	37	37	37	50	50	50	50	50	37	50	50	85	85	85	85	85	85	F 1
17						20	37	37	37	37	37	37	37	37	37	37	37	0	0	0	0	0	0	0	0	0	F 1

GRADE & GPA Table (Used to calculate student grades on the Gradebook sheet)

Score	Letter Grade	GPA	XP	Level
0 - 19	F	0.00	0 - 199	0
20 - 39	F	0.00	200 - 399	1
40 - 49	F	0.00	400 - 499	2
50 - 54	D	1.00	500 - 549	3
55 - 59	D+	1.70	550 - 599	4
60 - 62	C-	1.70	600 - 629	5
63 - 66	C	2.00	630 - 669	6
67 - 69	C+	2.30	670 - 699	7
70 - 72	B-	2.70	700 - 729	8
73 - 76	B	3.00	730 - 769	9
77 - 79	B+	3.30	770 - 799	10
80 - 84	A-	3.70	800 - 849	11
85 - 94	A	4.00	850 - 949	12
95 - 100	A+	4.00	950 - 1000	13
101+	A+	4.00	1001+	14

Different Structure of Educational Systems

No Grade Levels → Continuous Progress

No Courses → Projects,
Attainments

No Grades → Inventories of Attainments

No Classrooms → Studios, Collaboration
Contexts

Different Structure of Educational Systems

No Courses →
Projects,
Attainments

Avatar	<your avatar>	Item Max Count	Item Max Score
Totals			
Epic Quest [Guild]			
1.00	IGNITE Presentation	1	200
Achievement Quests [Solo : Do at least 4]			
2.01	One - Two Minute Minute Pitch	1	50
2.02	Profiling Mission	1	50
2.03	A.I. Mission (Chicken Paper)	1	50
2.04	Excel Game/Sim	1	50
2.05	Data Analysis Mission	1	50
The Game [Solo Standard & Mini Quests]		53	
3.01	Timed Quest [Posting A self-Introduction]	1	20
3.02	Persuasion Quest [Editorial Response/Reflection]	4	20
3.03	Defend Quest [Respond to someone else's comment]	10	10
3.04	Talk To Quest [Comment on a post made by another]	5	10
3.05	Collection Quest [Create a class poll.]	4	25
3.06	Craftskill I [Create an Avatar]	2	10
3.07	Craftskill II [Screenshot]	5	10
3.08	Craftskill III [Image Editing]	4	15
3.09	Delivery Quest [Out of Class Mission]	4	10
3.10	Discovery Quest [IN Class Mission]	4	10
3.11	Interact Quest [Create a LinkedIn account]	1	25
3.12	Test of Lore [Quiz]	5	10
3.13	Turn-In Quest [QIC - Form]	4	25
Boss Battle [The Final]			
4.00	Boss Battle (a.k.a. Final Exam)	1	250

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Different Structure of Educational Systems

No Grades →
Inventories of
Attainments

COMP 1103 Quest Log										
Player	<your name>	Item Max Score	Item No.	Score	Date Assessed	Date Submitted	Type of Item	Link to Item	Player Comments	Game Master Comments
				0						
Epic Quest [Gulf]										
1	1.00 IGNITE Presentation	200	1					Link Link2		
Achievement Quests [Solo - Do at least 4]										
1	2.01 One Minute Pitch	50	1							
1	2.02 Profitting Mission	50	1							
1	2.03 A.I. Mission (Chicken Paper)	50	1							
1	2.04 Excel Game/3m	50	1							
1	2.05 Data Analysis Mission	50	1							
The Game [Solo Standard & Mini Quests]										
1	3.01 Timed Quest [Self-Introduction]	20	1							
4	3.02 Persuasion Quest [Reflection]	20	1							
	3.02		2							
	3.02		3							
	3.02		4							
10	3.03 Defend Quest [Comment Response]	10	1							
	3.03		2							
	3.03		3							
	3.03		4							
	3.03		5							
	3.03		6							
	3.03		7							
	3.03		8							
	3.03		9							
	3.03		10							
5	3.04 Talk To Quest [Post Comment]	10	1							
	3.04		2							
	3.04		3							
	3.04		4							
	3.04		5							
4	3.05 Collection Quest [Class poll]	25	1							
	3.05		2							
	3.05		3							
	3.05		4							
2	3.06 Craftakill I [Create Avatar]	10	1							
	3.06		2							
5	3.07 Craftakill II [Screenshot]	10	1							
	3.07		2							
	3.07		3							
	3.07		4							
	3.07		5							
4	3.08 Craftakill III [Image Editing]	15	1							
	3.08		2							
	3.08		3							
	3.08		4							
4	3.09 Delivery Quest [Out of Class]	10	1							
	3.09		2							
	3.09		3							
	3.09		4							
4	3.10 Discovery Quest [In Class]	10	1							
	3.10		2							
	3.10		3							
	3.10		4							
1	3.11 Interact Quest [LinkedIn]	25	1							
5	3.12 Test of Lore [Quiz]	10	1							
	3.12		2							
	3.12		3							
	3.12		4							
	3.12		5							
4	3.13 Turn-In Quest [QIC - Form]	25	1							
	3.13		2							
	3.13		3							
	3.13		4							
Boss Battle [The Final]										
	4.00 Boss Battle (a.k.a. Final Exam)	220								

Gamification: A Different Structure

Different Structure of Educational Systems

No Grade Levels	→	Continuous Progress
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Different Structure of Educational Systems

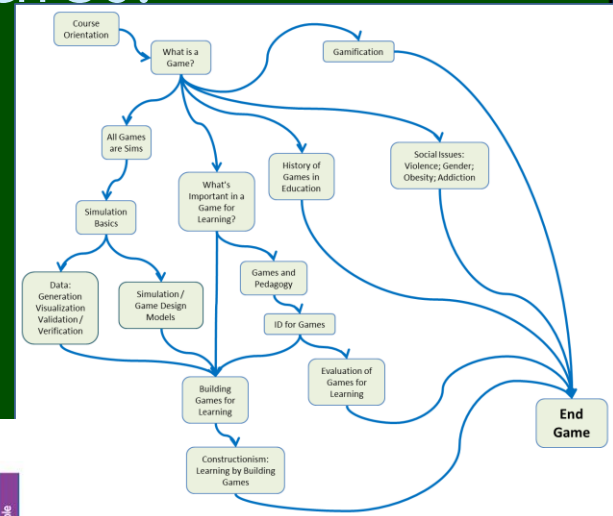
No Classrooms →
Studios, Collaboration
Contexts



Image Credit: <http://thelearningexpresspreschool.com/>

Different Paradigm of Pedagogy

- Students learn at different rates.
- Student progress is
 - attainment-based
 - customised
- Project Based
- Tutorial



Range of Power Builders in each Reading Laboratory

Student Age	Reading Laboratory	Purple	Violet	Rose	Red	Orange	Gold	Brown	Tan	Green	Olive	Aqua	Blue	Purple	Violet	Rose	Red	Orange	Gold	Brown	Tan	Green	Olive	Purple
4-6	1st Reading Lab	Phonics - Word Games - First Reader																						
Revised!	6-9	Developmental 1																						
Revised!	6-7	Reading Lab 1a																						
Revised!	7-8	Reading Lab 1b																						
Revised!	8-9	Reading Lab 1c																						
Revised!	9-12	Developmental 2																						
Revised!	9-10	Reading Lab 2a																						
Revised!	10-11	Reading Lab 2b																						
Revised!	11-12	Reading Lab 2c																						
Revised!	12-15	Developmental 3																						
Revised!	12-14	Reading Lab 3a																						
Revised!	13-15	Reading Lab 3b																						



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<http://www.srareadinglabs.com/>

Different Roles

- For Students:
 - active
 - self-directed
- For Teachers:
 - designers
 - facilitators
 - mentors

3.0 The Game					Please note that 'Max Items' * 'Max Score' totals > what you need. You are responsible for keeping track of your own score.															
Avatar:	<your avatar>				Max	count	Max	Max	total	1	2	3	4	5	6	7	8	9	10	
Solo	0	Your Score				Items		XP	Total											
Quests	735	Max Score				53	0	200	735	0										
3.01	Timed Quest [Posting A self-Introduction]				1	0	20	20	0	0										
	Includes appropriate 'shareable' personal information.																			
	Includes what you hope to get out of the course																			
	What field you think you want to go into (and why)																			
	o What you like to do in your spare time o What games (if any) you are playing now																			
3.02	Persuasion Quest [Editorial Response/Reflection]				4	0	20	80	0	0	0	0	0	0						
	Appropriate Style & Length (250-500 words)																			
	Connection to course and article is clear																			
	Thoughtful response																			
	Your opinion or argument is clear, and supported.																			
3.03	Defend Quest [Respond to someone else's comment on your post.]				10	0	10	100	0	0	0	0	0	0	0	0	0	0	0	
	Comment shows thought and consideration and is on topic (2-5 sentences).																			
	Connection to item you are commenting on is made clear (2-5 sentences).																			
3.04	Talk To Quest [Comment on a post made by another player.]				5	0	10	50	0	0	0	0	0	0	0					
	Comment shows thought and consideration.(2-5 sentences).																			
	On topic.																			
3.05	Collection Quest [Create a class poll.]				4	0	25	100	0	0	0	0	0	0	0					
	reasonable objective (main question)																			
	online poll questions and style appropriate for objective of poll																			
	collect results and download to excel																			
	chart type and format suits poll and helps visualize results																			
	report summarizes results and comments on limitations; possible improvements																			
3.06	Craftskill I [Create an Avatar]				2	0	10	20	0	0	0									
	use drawing program or character/avatar creator; add to profile																			
	avatar is in someway representative (looks like, symbolic of interests/characteristics)																			
3.07	Craftskill II [Screenshot]				5	0	10	50	0	0	0	0	0	0	0					
	usable capture (good resolution/format,etc.)																			
	nicely cropped and placed somewhere (like in a post)																			
3.08	Craftskill III [Image Editing]				4	0	15	60	0	0	0	0	0	0						
	download, crop																			
	edit (change by adding drawing, text, effects,...)																			
	nicely cropped and placed somewhere (like in a post)																			

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Different Roles

- For Students:
 - active
 - self-directed

- For Teachers:
 - designers
 - facilitators
 - mentors

Player		Item Max Score	Item No.	Status	XP	Link to Item	Details
					700		
Epic Quest [Guild]							
1	1.00	IGNITE Presentation	200	1	AT LEAST HALF-WAY	Apr-9	Documents are DUE NOVEMBER 1
Achievement Quests [Solo : Do at least 4]							
1	2.01	One Minute Pitch	50	1	STARTED		You should have TWO of these DONE, AND be well started on a third one.
1	2.02	Profiling Mission	50	1	DONE	50	
1	2.03	A.I. Mission (Chicken Paper)	50	1	DONE	50	
1	2.04	Excel Game/Sim	50	1	DONE	50	
1	2.05	Data Analysis Mission	50	1			
The Game [Solo Standard & Mini Quests]							
1	3.01	Timed Quest [Self-Introduction]	20	1	EXPIRED	20	Done, No longer available.
4	3.02	Persuasion Quest [Reflection]	20	1	DONE	20	Start a conversation on Discussion Forum
	3.02			2	DONE	20	
	3.02			3	DONE	20	
	3.02			4			
10	3.03	Defend Quest [Comment Response]	10	1	DONE	10	Respond to a comment on YOUR post on Discussion Forum
	3.03			2	DONE	10	
	3.03			3	DONE	10	
	3.03			4	DONE	10	
	3.03			5	DONE	10	
	3.03			6	DONE	10	
	3.03			7			
	3.03			8			
	3.03			9			
	3.03			10			
5	3.04	Talk To Quest [Post Comment]	10	1	DONE	10	Respond to someone ELSE's post in Discussion Forum
	3.04			2	DONE	10	
	3.04			3	DONE	10	
	3.04			4			
	3.04			5			
4	3.05	Collection Quest [Class poll]	25	1	DONE	15	share link to poll; then upload spreadsheet w/ results & analysis to YOUR course folder
	3.05			2	DONE	15	
	3.05			3			

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Different Roles for Technology.

- Student Learning:
 - record-keeping
 - planning
 - instruction
 - assessment

		Item Max Score	Item No.	Score	Date Assessed	Date Submitted	Type of Item	Link to Item	Player Comments	Game Master Comments
				1165						
Epic Quest [Guild]										
1	1.00	IGNITE Presentation	200	1		11/14/2011 Nov 27	Write-up and plan	https://d	Postmortem is in the folder :)	The marks will be adjusted as more of the project is completed. I've put a few comments in a copy of the document and uploaded it to your shared folder.
				198	N6, N27, N28, D8					
Achievement Quests [Solo : Do at least 4]										
1	2.01	One Minute Pitch	50	1						
1	2.02	Profiling Mission	50	1	50	o10	Oct-10	Form	https://d	I also put a copy of the file in my shared folder.
1	2.03	A.I. Mission (Chicken Paper)	50	1	50	N4	Nov-2	Word and Excel files	https://d	Uploaded to my COMP 1103 file. Link to shared folder provided. Titled Toddler paper.
1	2.04	Excel Game/Sim	50	1	50	N12	Nov-9	Excel game	https://d	In folder in COMP 1103 file. Link to folder provided.
1	2.05	Data Analysis Mission	50	1						
The Game [Solo Standard & Mini Quests]										
1	3.01	Timed Quest [Self-Introduction]	20	1	20	S12	Sept 8	Post		I didn't provide a link because I was told it isn't necessary
4	3.02	Persuasion Quest [Reflection]	20	1	20	o10	Oct-10	Post	https://g	486 words
	3.02			2	20	o31	Oct-31	Post	https://g	433 words
	3.02			3	20	N6	Nov-6	Post	https://g	492 words
	3.02			4	20	D17	Dec-16	Post	https://g	It's a short one this time.
10	3.03	Defend Quest [Comment Response]	10	1	10	o3	Oct-3	Reply	https://g/1103/FuF	Reply to your post
	3.03			2	10	o3	Oct-3	Reply	https://g/1103/FuF	Reply to Therese's post
	3.03			3	10	o3	Oct-10			Reply to your post in my post. Will provide link later (from my comp, not my phone).
	3.03			4	10	N4	Nov-4	Reply	https://g	Reply to comment in my post
	3.03			5	10	N16	Nov-15	Reply	https://g	Data usage post - replied to reply.

Reigeluth, C. M., & Karnopp, J. (2013). *Reinventing schools : it's time to break the mold*. Lanham: Rowman & Littlefield Education.

School is Already a Game

course requirements \leftrightarrow game objectives
policies / regulations \leftrightarrow game rules
assignments \leftrightarrow quests
grades \leftrightarrow XP
passing course \leftrightarrow winning the game

Key Differences

1. Flexible Path
2. Flexible Schedule
3. Self-Directed
4. Maximal Choice
5. Accumulative Grading

Questions? Comments?



Abstract of Presentation:

In a recent online presentation Charles M. Reigeluth, he said that the future of Ed Tech would require a change of paradigm of pedagogy. Gamification is one such new pedagogy that can be implemented without the need for institutional systemic change.

'Gamification' is the use of game elements in non-game contexts and since the term's first appearance in 2006, it has become a trending topic on many education forums. This presentation reports on the gamification of 2 university courses: one a grad-level education course and the other a freshman computer course.

While many aspects of gamification are *not* new, some are, and when taken together create a pedagogy that could be one of Reigeluth's different paradigms. His requirements for a new paradigm includes a requirement for attainment-based, continuous student progress that is learner-centered, personalized, and self-directed. Gamification, done right, is all those things.

The Gamification Paradigm includes:

1. Strict cumulative grading.
2. More tasks to choose from than needed for a perfect score.
3. Flexible path through content to demonstrate objectives.
4. Attainment-base student progress.
5. Criterion-referenced assessment.

The presentation will explain the structure of the courses that were taught, highlight successes and failures, and conclude with strategies that can be used to incorporate meaningful gamification into existing courses.

Resources

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- Nicholson, S. (2012). A User-Centered Theoretical Framework for Meaningful Gamification. Paper presented at the Games + Learning + Society 8.0, Madison, WI. on June 13
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