FLC 091 Adjunct Fall RIT Project

The primary purpose of this paper is to determine if there are any valid aspects to my teaching/testing theory/practice that I am employing in my class Data Base Management Systems. This will be reviewed in the results section and a review of the literature to determine if my teaching, testing, Practices, theory can be found in literature

a) Tom Neely - Outside the Box Testing
b) Database Management Systems 0112.340.72
c) The target student is enrolled in the College of Imaging Arts and Sciences – school of print media.
d) Problem – student motivation to learn the material
e) Offer retesting opportunities to students and provide incentives to improve their test scores. Offer 3 out of the box retests
    a. Review and retest, as a class through lecture and group class exercise review the material that was covered on the last test. At the end of the review session have the students retake the exam. The incentive is to tell the student that the highest grade will count.
    b. Tutoring/Retesting – on a one on one basses I will read the test to the student and the student answers the question. The student is encouraged to ask questions and I will ask additional questions to ensure that the student understand the material and not just the test question. The goal is for the student to understand the material and to be able to apply it. The incentive for the student – to possibly get 100 on the exam.
    c. Give the same exam using the same questions mutable times after the student has had the opportunity to apply the concepts covered in the exam and in practical applications

        See Results for e) d
f) Assessment method -test scores
g) I will be using the testing features in Mycourses
h) Timeline – beginning week 3 and ending week 11 of current quarter
i) Obstacles –
    a. Students that are happy with their initial test scores may be unwilling to elect to retest.
    b. Students may be reluctant to meet on a one on one basses for retesting.
    c. Students may think it is too much work

2. Literature Review – The first column references the literature used

	What the literature says	How it fits with what I have don
1	Make Student Learning the Primary Goal	After the first exam it was clear that students did not understand the first 6 goals that I had outlined. Because learning is my primary goal I have spent 6% of the remaining class time dedicated to reviewing the first six goals and in every class exercise I work into the assignment the use of the first 6 goals. In every exam I gave the student the opportunity to show that they understand the material now or that they have retained the understanding of the material. See Results for e) a
2	Learners need reality check; They need to know how a professional would judge their work. Often a tough judgment, delivered in a supportive way, can be the most helpful feedback you can offer	After student 'drew' their first Entity Relationship Diagram (ERD) in class using power point. It was clear that they still - • Did not understand the primary key foreign key relationship to the extent that I want them to • They did not understand the importance of showing a complete ERD for the database • The importance of an ERD that was eye appealing and easy to follow. Easy to follow and eye appealing is defined by having entities that are closely related grouped within the ERD and relationship lines do not cross each other and or other entities (See example 1 page 7 for what was expected and example 2 for what was turned in page 8)
1	Make Student Learning the Primary Goal	Instead of identifying everything wrong with each students ERD I opted to review the expectations in class. See results for e) a
3	You should know what you want your students to learn and you should be able to write them clearly and you should be able to measure them to the extent that you now they have been achieved	I have clearly defined goals as outlined below 1. Know what a primary key is 2. Know what a composite primary key is 3. Know what a foreign key is 4. Know how the primary key/foreign key relationship works and can demonstrate it 5. Know that the relationships between attributes must be one too many • Know how to recognize a relationship

		that is not one • Know how to fix many to many relationship • Know that you have to justify a one to one relationship 6. Know that attributes must be simple and single valued • Recognize when an attribute is not simple and single valued. • Know what do when an attribute is not simple and single valued. 7. Know how to design and build a database using phpMyAdmin 8. Demonstrate an ability to build quires
4	You should also have goals that are not easily measurable exactly	I want my students to learn what I call step thinking as it relates to database design and implementation. They should be able to answer; • What is the first step, what is the second step, what is the third step... • Where do I get the information from to use in each step
5	Select Assignments and Test That Measure What You Value Most To solve the problem of putting too much emphasis on merely getting the right answers one math professor had the students solve the problems on one side of the paper and explain the steps in the problem solution in sentences format on the other side of the paper	Students were asked to move the books in one book store, Henry Down Town to another book store Henry East Shore. Using Structured Query Language (SQL) and one manual process and then were asked to write the steps in sentences. (The manual process was included to simplify the problem) Results This seemed like a very good idea. It also proved to be very challenging for the students. The process for moving the books was 1. Using select a query find the books that each store had in common. 2. Add the count of the common books together by title and set the count to zero for Henry Down Town. Example, Henry Down Town had 5 copies of the book Bridges, and Henry East Shore had 3 copies of the same book. Manually add the 5 to the 3 for a total of 8 books on hand at Henry East

		Shore and set the count of books on hand for Henry Down town to 0. 3. Using a delete query, delete the books from Henry Down Town that have an inventory of zero. 4. Using an Insert query add the remaining books from Henry Down Town to Henry East shore. 5. Using a delete query, delete the remaining book from Henry Down Town. Students had difficulty with this concept. In tutoring seasons when asked how they would move books from one store to another manually they could not come up with the following. 1. Place the books in Boxes and label the boxes with the book type and titles 2. Move the boxes to the new store 3. Place the books on the shelves in the appropriate location. 4. Place the books with the same titles next to each other Once we walked through the process step by step, students had difficulty remember what the steps were when asked to review them.
6	Choose assignments that are interesting and challenging to you students.	The assignments in the book at the end of 1 are good in that they require the student to write SQL however they lack in that they leave the student asking the question - way am I doing this? To eliminate that problem I re-worded or ask original question in my assignment. Example from the book for Premiere Products that I re-worded; 'List the descriptions of all parts in item class AP and locate in warehouse number 3' (my addition)The warehouse manager at Premiere Products has decided to move all the products from warehouse 3 that have a class of AP(appliance) to warehouse 1. She needs a list of all the appliances in warehouse 3 and the product codes. So she can fill out the necessary paper work to the products moved. At the end of the move all the appliances will be located in warehouse 3. Results Did not seem to make any difference. In some

		cases students could not separate the task from the reason for the task and as a result had difficulty solving the problem.
7	Use peer collaboration. Consider assignments and tests that students complete in groups. The evidence for the potential of collaborative work to enhance student learning is so strong that a group of scalars, reviewing the literature on students learning and pedagogy, included cooperation among students as one of the seven "principles of good practice" for undergraduate education (Chickering and Gamson, 1987	For assignments in class students are encouraged to work together however each student must hand in their own copy It seems that one student worked on finding the answers to a problem, when they had an answer they shared it with their group. The other members of the group would copy the answer without understanding it. It's like they all have a piece of the puzzle but they are putting it together with the picture facing the table. They got it together but do not see the picture, in other words they solved all the problems but did not understand. In some cases their answers were not correct and it was not noticed because all the student was focused on was getting through the problems

1. Effective Grading page 14 – Principle 9
2. Effective Grading page 14 –
3. Effective Grading page 18 –
4. Effective Grading page 22 -
5. Effective Grading page 19 –
6. Effective Grading page 24 –2. Choose
7. Effective Grading page 24,25 –3. Use

3. Design the lesson

Week 4 exam 1 Review slides

In class week 5 and 6 cover the new material in the context of reviewing the old material. Including the learning objectives -

- Know what a primary key is
- Know what a composite primary key is
- Know what a foreign key is
- Know how the primary key/foreign key relationship works and can demonstrate it
- Know that the relationships between attributes must be one to many
- Know how to recognize a relationship that is not one
- Know how to fix many to many relationship
- Know that you have to justify a one to one relationship
- Know that attributes must be simple and single valued
- Recognize when an attribute is not simple and single valued.
- Know what do when an attribute is not simple an single valued.
- Know how to design and build a database using phpMyAdmin

Results for e) a

12 Student took the test 2 times

Average number of points earned went up by 1.54

6 Improved

Max improvement 24.84 Points

Min improvement 0.37 points

Average improvement 7

6 Lost points

Max points lost 7.14

Min points lost 1.38

Average points lost 3.92

Possible conclusions/speculation

- Students knew that they would receive the highest of the two test as a result they may not have tried as hard
- The activities before the exam were not adequate enough to stimulate additional learning
- If a student misses a test you do not need to make a different test for the student, just let them take the same test as it most likely will not matter

Results for e) b

13 Students took the exam 1 part 3 over with tutoring

8 Students elicited to be tutored and as a result received 100% for the exam

5 Students elicited not to be tutored and also did not retaken the exam

High score 34

Low score 11

Average score 24.8

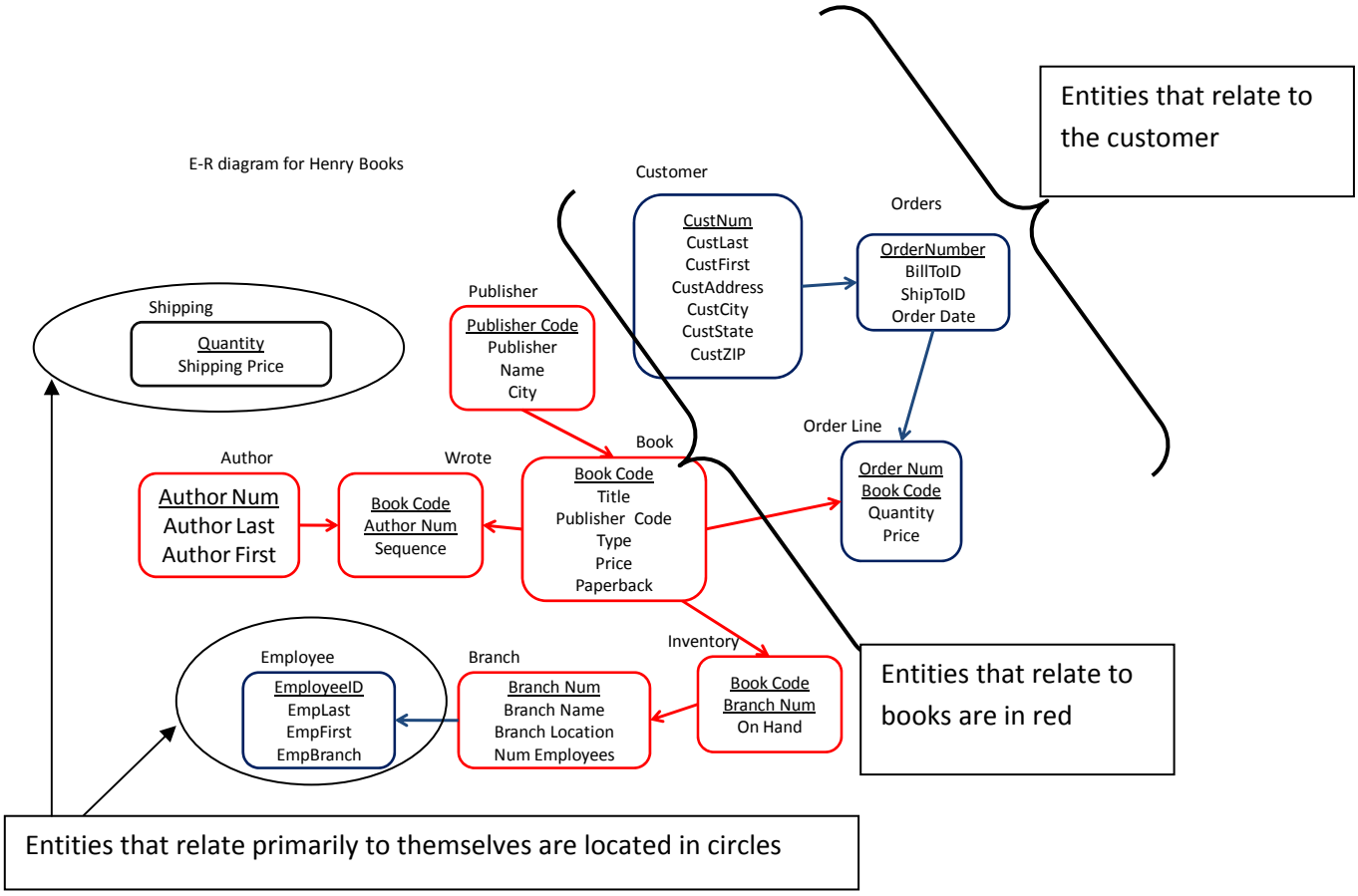
After the tutoring students that elected to take exam 1 part 2 over again on their own increased their own scores from an average of 10 point to an average of 18 – problems centered around not remembering and an inability to report on what they had just accomplished

Possible conclusions/speculation

- For the 8 students I believe that after the tutoring 7 of them deserved the 100%. I believe that the 8 person only had a 80% understanding of the material
- For the 5 that did not elect for the tutoring I can only speculate that they did not want to take the time to meet with me and grades do not matter to them

For the ERD this or something similar was expected and this slide was used as an example

Example 1

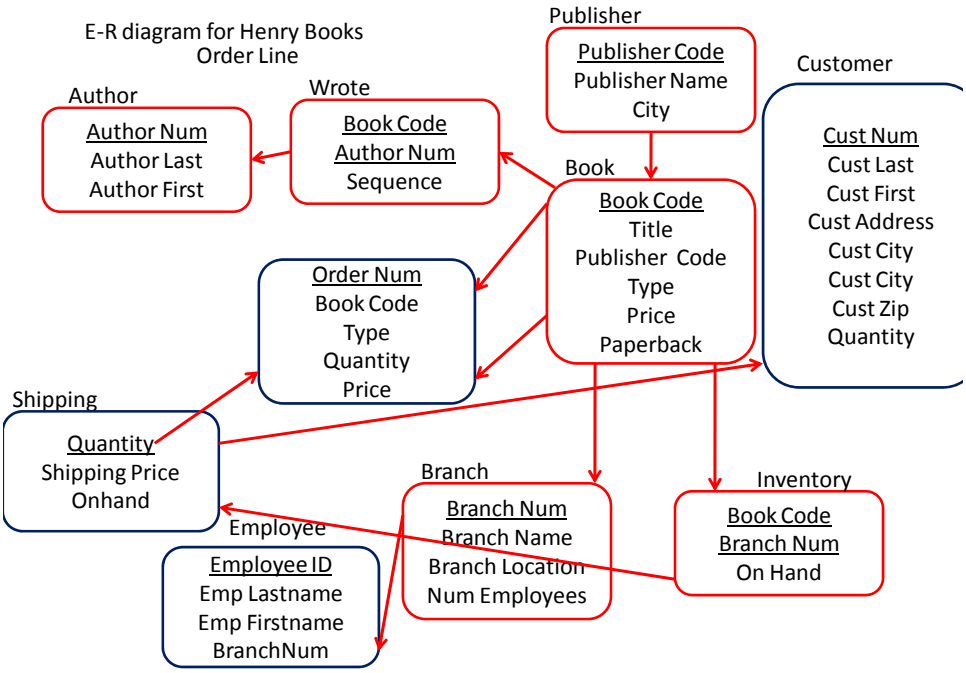


Example 2

This is an example of what was handed in

Problems,

Relationship lines cross each other
Relationship lines cross entities
Missing entity – Orders entity
Wrong - On Hand is not an attribute of Shipping
Wrong – the shipping entity should not be connected to anything
Wrong – the entity Order type has wrong
The entity box for Customer fall off the page
It is not grouped very well
Foreign Keys are not identified
….



Conclusion – It seems that the students did not understand the imports of a good ERD. In classes following this showed how the ERD should be used to aid in building queries.

Week 4 exam 1 Review slides

Leaning objectives

- Continue to use the correct terminology
- Understand the purpose of a primary Key
- Understand that a composite primary key is two or more attributes that when combined are a Primary Key
- Understand way you cannot simply change parts of a primary key

Understand way you cannot simply change parts of a primary key

Book Title	BookCode	BranchNum	OnHand
Harry Potter and the Prisoner of Azkaban	2226	1	3
Harry Potter and the Prisoner of Azkaban	2226	3	2
Harry Potter and the Prisoner of Azkaban	2226	4	6

- This table uses a composite Primary Key
  - Book Code and Branch Number
  - ***

Understand way you cannot simply change parts of a primary key

Book Title	BookCode	BranchNum	OnHand
Harry Potter and the Prisoner of Azkaban	2226	1	3
Harry Potter and the Prisoner of Azkaban	2226	3	2
Harry Potter and the Prisoner of Azkaban	2226	4	6

- Move the Harry Potter books to store 4

Book Title	BookCode	BranchNum	OnHand
Harry Potter and the Prisoner of Azkaban	2226	4	3
Harry Potter and the Prisoner of Azkaban	2226	4	2
Harry Potter and the Prisoner of Azkaban	2226	4	6

Understand way you cannot simply change parts of a primary key

- You cannot simply change the data in an attribute if it breaches the rules for the primary key for that record, in other words causing the primary key to no longer uniquely identify the record.

Book Title	BookCode	BranchNum	OnHand
Harry Potter and the Prisoner of Azkaban	2226	4	3
Harry Potter and the Prisoner of Azkaban	2226	4	2
Harry Potter and the Prisoner of Azkaban	2226	4	6

Class exercise

Week 4

- my courses week 4
  - Class Exercise Review
  - Slides for students to use during team work
- Working in your team
- When you are finished place it in the drop box for week 4

Class exercise

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Class Exercise Review

Identify the attribute type for the database table structure in the diagram below. Place an X in the box

Student ID	Student Name	Student Major	Student DOB	Student Hours	Student Status	Student GPA	Student Age
21223	Joanne R. Hillard	CIS	12-Mar-1972	102 Earned 106 Attempted 15 Current	SR Full time	3.2	37
21226	John H Smith	ACCT	23-Jun-1980	79 earned 12 Transferred 15 Current	JR Part time	2.98	37
21227	Ralph J Dean	SOC, HIST	18-Jun-1980	89 Earned 94 Attempted 5 Current	JR Full Time	3.5	31

Attribute	Simple	Single Valued	Composite	Multi-Valued	Derived
Student ID	X	X			
Student Name		X	X		
Student Major	X			X	
Student DOB	X	X			
Student Hours			X	X	
Student Status			X	X	
Student GBA	X	X			
Student Age	X	X			X

Identify the Primary, Composite and Foreign keys for the following related tables

Use this form in my courses put it in the drop box when you are finished

Entity

Primary		
Composite Primary		
Foreign		

Identify the Primary, Composite and Foreign keys for the following related tables

Marina

MarinaNum	Name	Address	City	State	Zip
1	Alexamara East	108 2nd Ave	Brinman	FL	32273
2	Alexamara Central	283 Branston	W Brinman	FL	32274

Could there be a foreign if we were to add a table and what would that table be?

Owner

OwnerNum	LastName	FirstName	Address	City	State	Zip
AD57	Adney	Bruce and Jean	208 Citrus	Bowton	FL	31313
AN75	Anderson	Bill	18 Wilcox	Glander Bay	FL	31044
BL72	Blake	Mary	2672 Commodore	Bowton	FL	31313
EL25	Elend	Sandy and Bill	462 Riverside	Rivard	FL	31062
FE82	Feenstra	Daniel	7822 Coventry	Kaleva	FL	32521
JU92	Juarez	Maria	8922 Oak	Rivard	FL	31062
KE22	Kelly	Alyssa	5271 Waters	Bowton	FL	31313
NO27	Norton	Peter	2811 Lakewood	Lewiston	FL	32765
SM72	Smeltz	Becky and Dave	922 Garland	Glander Bay	FL	31044
TR72	Trent	Ashton	922 Crest	Bay Shores	FL	30992

MarinaSlip

MarinaNum	SlipNum	Length	RentalFee	BoatName	BoatType	OwnerNum
1	A 1	40	$3,800.00	Anderson II	Sprite 4000	AN75
1	A2	40	$3,800.00	Our Toy	Ray 4025	EL25
1	A3	40	$3,600.00	Escape	Sprite 4000	KE22
1	A4	30	$2,400.00	Gypsy	Dolphin 28	JU92
1	B3	30	$2,600.00	Anderson III	Sprite 3000	AN75
2	A1	25	$1,800.00	Bravo	Dolphin 25	AD57
2	A2	25	$1,800.00	Chinook	Dolphin 22	FE82
2	A3	25	$2,000.00	Listy	Dolphin 25	SM72
2	A4	30	$2,500.00	Mermaid	Dolphin 28	BL72
2	B1	40	$4,200.00	Axxon II	Dolphin 40	NO27
2	B3	40	$4,200.00	Karvel	Ray 4025	TR72
2	B2					

ServiceCategory

CategoryNum	CategoryDescription
1	Routine engine maintenance
2	Engine repair
3	Air conditioning
4	Electrical systems
5	Fiberglass repair
6	Canvas installation
7	Canvas repair
8	Electronic systems (radar, GPS, autopilots, etc.)

ServiceRequest

Service ID		Category Num	Description	Status	Est Hours	Spent Hours	Next ServiceDate
1		3	Air conditioner periodically stops with code indicating low coolant level. Diagnose and repair.	Technician has verified the problem. Air conditioning specialist has been called.	4	2	7/12/2010
2		4	Fuse on port motor blown on two occasions. Diagnose and repair.	Open	2	0	7/12/2010
3		1	Oil change and general routine maintenance (check fluid levels, clean sea strainers, etc.).	Service call has been scheduled.	1	0	7/16/2010
4		2	Engine oil level has been dropping drastically. Diagnose and repair.	Open	2	0	7/13/2010
5		5	Open pockets at base of two stantions.	Technician has completed the initial filling of the open pockets. Will complete the job after the initial fill has had sufficient time to dry.	4	2	7/13/2010
6		4	Electric-flush system periodically stops functioning. Diagnose and repair.	Open	3	0	
7		2	Engine overheating. Loss of coolant. Diagnose and repair.	Open	2	0	7/13/2010
8		2	Heat exchanger not operating correctly.	Technician has determined that the exchanger is faulty. New exchanger has been ordered.	4	1	7/17/2010
9		6	Canvas severely damaged in windstorm. Order and install new canvas.	Open	8	0	7/16/2010
10		8	Install new GPS and chart plotter.	Scheduled	7	0	7/17/2010
11		3	Air conditioning unit shuts down with "HHH" showing on the control panel.	Technician not able to replicate the problem. Air conditioning unit ran fine through multiple tests. Owner to notify technician if the problem recurs.	1	1	

Results for e) d

The same set of questions was given to the students throughout the quarter. Prior to each exam the student had worked on the concepts covered by the questions in a practical manor by solving assigned problems and a lecture type review of how the concept fit with the practical application of solving the problem. Final results

	First re-exam	Last exam
High Score	38	41
Low Score	30.5	28
Average Score	35.4	35.5

Four students increased their scores, four students decreased their scores and two students had no change. The average increase in score was 5 point over the first re-exam and the average decrease was 4.44. It was about 6 weeks between exams.

Conclusion

The primary purpose of this paper was to determine if there are any valid aspects to my teaching/testing theory/practice that I employed in my class Data Base Management Systems. I did find that many of my ideas were in the literature; however I also found the following to be true as well;

1. It requires a lot of time and effort

2. Students do not appreciate the amount of work involved
3. My students did not seem to extend any additional effort to learn the material for retesting
4. It was not necessary to make a new exam for students that miss it. Given the opportunity to make up a missed exam not every student will take advantage of it.
5. You do not need to worry about giving too many "A" grades as long as you give lots of work. Enough students will not do the work and as a result will not understand the material and as a result will receive a lower grade.