Syllabus: CSTE 5319. Critical Analysis of Instructional Software
Fall 2017
Department of Computer Science
Sam Houston State University

General Information

- Course title: Critical Analysis of Instructional Software
- Instructor: Donggil Song, Ph.D.
- Office: AB1, 212J
- Phone: 936-294-2696
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Office Hours

- Available online most times during this semester.
- Virtual office hours: Monday & Thursday: 9am – 12pm.
- Email is the best way to communicate.

Course Description

This course examines commercial educational software with respect to its suitability for use in educational settings. Drawing from an understanding of instructional (design) theories/principles and from research into good practice, students will analyze educational software based on the theories/principles. This is a 100% online course. There will be no face-to-face meetings required.

Course Objectives

At the end of this course students should be able to:

- Apply a systematic approach to the analysis of educational software
- Identify and filter out the weakest commercial products
- Understand the strengths and purposes of retained products

Course Introduction

Welcome to Critical Analysis of Instructional Software. In this course, you will learn and apply instructional design theories/principles. First, we will learn instructional design theories/principles, and then we will apply them in a series of assignments designed to critically analyze educational software. Many of the resources for this class will be freely available websites and academic journal articles that will be uploaded here for your convenience. I encourage you to also find other resources that will supplement these materials. In this course, the expectation is that you become familiar with reading and synthesizing academic, peer-reviewed journal articles. You will have the opportunity to analyze educational software by supporting your opinions with references/citations. Enjoy your critical thinking!

Learning Objectives	Performance Assessment	ISTE NETS Technology Facilitator
Coach teachers in and model engagement of students in local and global interdisciplinary units in which	Social Network, Project Portfolio,	2c

technology helps students assume professional roles, research real-world problems, collaborate with others, and produce products that are meaningful and useful to a wide audience.		
Coach teachers in and model design and implementation of technology-enhanced learning experiences emphasizing creativity, higher-order thinking skills and processes, and mental habits of mind (e.g., critical thinking, metacognition, and self-regulation).	Project Portfolio, Reflection	2d
Coach teachers in and model incorporation of research-based best practices in instructional design when planning technology-enhanced learning experiences.	Social Network, Project Portfolio	2f
Select, evaluate, and facilitate the use of adaptive and assistive technologies to support student learning.	Social Network, Project Portfolio, Reflection	3d
Engage in continual learning to deepen content and pedagogical knowledge in technology integration and current and emerging technologies necessary to effectively implement the NETS·S and NETS·T.	Social Network, Project Portfolio, Reflection	6a
Regularly evaluate and reflect on their professional practice and dispositions to improve and strengthen their ability to effectively model and facilitate technology-enhanced learning experiences.	Social Network, Project Portfolio, Reflection	6c

Textbook

No textbook is required for this course.

Module Readings

Module 1 (Week 2): Reigeluth, C. M. (1999). What is instructional-design theory and how is it changing? In C. M. Reigeluth (Ed.), *Instructional-design theories and models: A new paradigm of instructional theory*, Volume II (pp. 5-29). Mahwah, NJ: Lawrence Erlbaum Associates, Publishers.

Module 2 (Week 3): Song, D., & Lee, J. (2014). Has Web 2.0 revitalized informal learning?: The relationship between the levels of Web 2.0 and informal learning websites. *Journal of Computer Assisted Learning, 30*(6), 511-533.

Module 3 (Week 5): Dick, W., Carey, L., & Carey, J. O. (2009). Introduction to instructional design. In W. Dick, L. Carey, & J. O. Carey. *The systematic design of instruction* (7th ed., pp. 2-14). New York, NY: Addison-Wesley Educational Publishers Inc.

Module 4 (Week 6): van Merriënboer, J. J., & Ayres, P. (2005). Research on cognitive load theory and its design implications for e-learning. *Educational Technology Research and Development, 53*(3), 5-13.

Module 5 (Week 8): Merrill, M. D. (2002). First principles of instruction. *Educational Technology Research and Development, 50*(3), 43-59.

Module 6 (Week 9): Sharples, M., Taylor, J., & Vavoula, G. (2007) A theory of learning for the mobile age. In R. Andrews & C. Haythornthwaite (Eds.), *The Sage handbook of elearning research* (pp, 221-247). London: Sage.

Module 7 (Week 11): Morrison, G. R., Ross, S. M., Kemp, J. E., & Kalman, H. (2007). Introduction to the instructional design process. In G. R. Morrison, S. M. Ross, J. E. Kemp, & H. Kalman (Eds.), *Designing effective instruction: Applications of instructional design* (5th. ed., pp. 1-26). New York, NY: John Wiley & Sons.

Module 8 (Week 12): Driscoll, M. P. (2017). Psychological foundation of instructional design. In R. A. Reiser, & J. V. Dempsey (Eds.), *Trends and issues in instructional design and technology* (4th ed., pp. 52-60). Upper Saddle River, NJ: Pearson Education.

Supplementary References

Christensen, T. K., & Osguthorpe, R. T. (2004). How do instructional-design practitioners make instructional-strategy decisions?. *Performance Improvement Quarterly, 17*(3), 45-65.

Merrill, M. D., Barclay, M., & Schaak, A. V. (2008). Prescriptive principles for instructional design. In M. Spector, D. Merrill, J. V. Merriënboer, & M. Driscoll (Eds.), *Handbook of research on educational communications and technology* (3rd ed., pp. 523–556). New York: Lawrence Erlbaum Associates.

Reigeluth, C. M., & An, Y. J. (2006). Functional contextualism: An ideal framework for theory in instructional design and technology. *Educational Technology Research and Development, 54*(1), 49-53.

Reigeluth, C. M., & Carr-Chellman, A. A. (2009). Understanding instructional theory. In C. M. Reigeluth & A. A. Carr-Chellman (Eds.), *Instructional-design theories and models: Building a common knowledge base* (Vol. III, pp. 3-26). New York: Routledge.

Song, D. (2016). Expertise reversal effect and sequencing of learning tasks in online English as a second language learning environment. *Interactive Learning Environments, 24*(3). 423-437.

Song, D. (2014). A framework for mobile learning app design: DCALE. In C. Miller & A. Doering (Eds.), *The new landscape of mobile learning: Redesigning education in an app-based world* (pp. 120-137). New York, NY: Routledge.

Spector, J. M. (2008). Theoretical foundations. In J. M. Spector, M. D. Merrill, J. van Merriënboer, & M. P. Driscoll (Eds.), *Handbook of research on educational communications and technology* (pp. 21–28). New York: Routledge Taylor & Francis.

Sweller, J., Van Merrienboer, J. J., & Paas, F. G. (1998). Cognitive architecture and instructional design. *Educational Pychology Review, 10*(3), 251-296.

Tasks and Grading (Total 500 points)*

- Task 0. Weekly Self-regulated Learning Activity (4 points X 15 weeks = 60 points)
- Task 1 – 8. Questioning activity (20 points X 8 modules = 160 points)
- Task 9 – 11. Critique (40 points X 3 tasks = 120 points)
    - Task 9. Critique - Educational website (Week 4)
    - Task 10. Critique - Educational game (Week 7)
    - Task 11. Critique - Educational mobile App (Week 10)
- Task 12. Rubric building (Group task) (80)
    - Building a rubric for rating the quality of an educational website & Rubric explanation (academic writing + video presentation)
- Task 13. Critique - Educational software (80)

* All tasks are individual tasks. Except Task 12 (Group task).
* If the required tasks are completed after the due date, the penalty points will be applied to each late assignment:

- 10% penalty between 0 – 24 hours
- 20% penalty between 24 – 48 hours
- 100% penalty after 48 hours
- For the fourth time and any further delayed to turn in the late assignment, no grade will be issued.
- There will be no extra credit project offered to make up any missing points.

Grading Criteria

- A: 450 – 500
- B: 400 – 449
- C: 350 – 399
- F: Below 349

Course Schedule

Week	Dates	Topic	Task*
1	8/23 – 8/29	Preview, Background Posting, Plagiarism	(Task 1. Part 1)
2	8/30 – 9/5	Module 1	Task 1
3	9/6 – 9/12	Module 2	Task 2
4	9/13 – 9/19	Critique 1. Educational Website	Task 9
5	9/20 – 9/26	Module 3, Group Formation	Task 3
6	9/27 – 10/3	Module 4	Task 4
7	10/4 – 10/10	Critique 2. Educational Game	Task 10
8	10/11 – 10/17	Module 5	Task 5
9	10/18 – 10/24	Module 6	Task 6
10	10/25 – 10/31	Critique 3. Educational Mobile App	Task 11
11	11/1 – 11/7	Module 7	Task 7
12	11/8 – 11/14	Module 8	Task 8
13	11/15 – 11/21	Rubric Building Presentation	Task 12
14	11/22 – 11/28	Review & Thanksgiving	n/a
15	11/29 – 12/5	Educational Software Critique	Task 13

*Note: Every week has Task 0 (Weekly Self-regulated Learning Activity).

Community Engagement

In this course, you will not only learn knowledge and skills, but also actively use them to make a difference in our community to improve the quality of life. This experience, it is hoped, will help you see yourself as a positive force in this world and deepen your understanding of your role as a citizen.

Academic Community Engagement

In this course, students will not only become familiar with the concepts, theories, skills, or content, but will use this knowledge to make a difference within a community. Students are also expected to turn in a written reflection about the course in terms of the community engagement experience. This ACE experience, it is hoped, will help students see themselves as positive forces in this world and able to improve the quality of life.

Tests

This course is a project-based course and does not require tests or final exams.

Academic Dishonesty

All students are expected to engage in all academic pursuits in a manner that is above reproach. Students are expected to maintain complete honesty and integrity in the academic experiences both in and out of the classroom. Any student found guilty of dishonesty in any phase of academic work will be subject to disciplinary action. The University and its official representatives may initiate disciplinary proceedings against a student accused of any form of academic dishonesty including, but not limited to, cheating on an examination or other academic work which is to be submitted, plagiarism, collusion and the abuse of resource materials.

The students are not allowed to turn in or modify any projects or files from other classes to earn academic credits toward to this course, unless the students obtain a written permission from the professor.

Students with Disabilities Policy

It is the policy of Sam Houston State University that individuals otherwise qualified shall not be excluded, solely by reason of their disability, from participation in any academic program of the university. Further, they shall not be denied the benefits of these programs nor shall they be subjected to discrimination. Students with disabilities that might affect their academic performance should register with the Office of Services for Students with Disabilities located in the Lee Drain Annex (telephone 936-294-3512, TDD 936-294-3786, and e-mail disability@shsu.edu). They should then make arrangements with their individual instructors so that appropriate strategies can be considered and helpful procedures can be developed to ensure that participation and achievement opportunities are not impaired.

SHSU adheres to all applicable federal, state, and local laws, regulations, and guidelines with respect to providing reasonable accommodations for students with disabilities. If you have a disability that may affect adversely your work in this class, then I encourage you to register with the SHSU Services for Students with Disabilities and to talk with me about how I can best help you. All disclosures of disabilities will be kept strictly confidential. NOTE: No accommodation can be made until you register with the Services for Students with Disabilities. For a complete

listing of the university policy, see: http://www.shsu.edu/dept/academic-affairs/documents/aps/students/811006.pdf

Religious Observance

University policy allows for student to observe religious holy days without penalty. If you intend to miss class or project due dates as a result of the observance of a religious holy day or as a result of the necessary traveling time required for religious observance, such an absence will not be penalized. As a courtesy, it would be appreciated if you notify the instructor in advance in writing, of the dates and times of class sessions that are to be missed.

Drop Dates

See academic calendar: http://www.shsu.edu/~reg_www/academic_calendar/

Academic Probation and Suspension (from the Graduate Catalog 2016-2017)

In order to achieve and remain in academic good standing at Sam Houston State University, a graduate student must maintain an overall grade point average of at least 3.0 on all graduate coursework attempted. A graduate student who falls below a 3.0 overall grade point average at the close of any semester during which one or more semester credit hours are attempted will be placed on probation. If an enrolled student on probation fails to achieve a minimum 3.0 overall grade point average at the close of the next semester or summer school following the starting of the probation, the student will be suspended. A 3.0 overall grade point average is the absolute minimum required for graduation. A student who earns three grades of "C" or one grade of "F" will be terminated from graduate studies.