

University of Toronto

Ontario Institute for Studies in Education - OISE

CTL1799H - Special Topics In Curriculum:
Holistic Approaches To Information Technology

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Course Overview:

DIFFERENT DIFFERENTIATION: A CONSTRUCTIVIST APPROACH

Ruby Partners: Shèrida Scott & Renato Carvalho



1. Introduction

We decided to design a course on Differentiated Learning that would be taught to students obtaining their Bachelor of Education credential. We quickly realized that this would be a complex and amazing task, given that - in order to be true to the subject matter - we would have to employ pedagogical principles that see us offer differentiated instruction to students learning about differentiation (in essence, our approach to the course would offer a meta-commentary on the content being taught). In “real-life” we would have utilized the first weeks of the course to determine the learning styles, readiness, choice and abilities of the specific student population of our class in order to construct differentiated practices that appropriately reflected the needs of our students; however, because we we did not have any actual students upon which to base our lesson planning, we have done so hypothetically, realizing that such differentiated practices would come later in the course, after having had the opportunity to determine the differentiation needs of the class. In this way, we believe we have designed a course capable of offering diverse and rich learning experiences that will allow the students to develop not only a deep understanding of differentiation within a constructivist framework, but also the skills to then apply such knowledge within their own pedagogical practice.



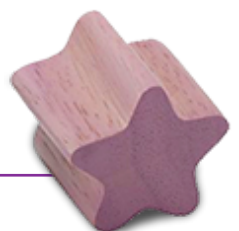
2. Course Description

The purpose of the “**DIFFERENT DIFFERENTIATION: A CONSTRUCTIVIST APPROACH**” course is to introduce student teachers (or newly appointed teachers) to differentiated instruction and assessment within a constructivist framework. Students will learn what differentiation is, the objectives of differentiation, as well as the key features of this pedagogical approach (such as differentiation by content, process, learning environment and product). Additionally, students will have the opportunity to design/construct various activities based on differentiated practices. By the end of this course, students will be able to gain a fulsome understanding of differentiated instruction and assessment and will be able to apply this knowledge to their own teaching practice.

3. Learning objectives

After completing the course, participants will know/understand:

- Principles of constructivism
- The key features of differentiated instruction
- The types of differentiated assessment which include: process, content, product, student interest, student readiness, individual educational plans (IEP) and learning styles
- Nuances of learning style theories
- Characteristics of individual educational plans



After completing the course, participants will be able to:

- **Describe** constructivist principles
- **Identify** and describe strengths and weaknesses of the constructivist approach
- **Participate** in collaborative activities in a responsible and mature way
- **Construct** activities which incorporate constructivist principles
- **Describe** nuances of differentiated instruction and assessment
- **Identify** and **explain** the differences in differentiation by content, process, product, learning style, readiness and interest
- **Collaborate** with peers in a respectful manner
- **Apply** knowledge of differentiation to creative activities
- **Explain** the different learning styles
- **Reflect** on their own learning styles
- **Connect** their own learning style to a mode of differentiation best suited to their learning needs



4. Principles

The course is deeply grounded in the principles of **Constructivism** and **Differentiation** as both pedagogical approaches are pathways to authentic students engagement and a fulsome development of learning.

4.1 Constructivism

Constructivism is a pedagogical approach which emphasizes that knowledge is constructed and as such, “[c]onstructivist approaches to learning strive to create environments where learners actively participate in the environment in ways that are intended to help them construct their own knowledge, rather than having the teacher interpret the world and ensure that students understand the world as they have told to them” (Jonassen, 1998, pg. 13).

The following constructivist principles will be utilized throughout this course:

- Teacher as facilitator
- Student as expert
- Learning is constructed through experience
- Learning is interactive, collaborative and exploratory
- Visible thinking activities are utilized
- Learning is scaffolded
- Learning environment is structured so that students are engaged in inquiry
- Students are given time to learn at their own pace and construct knowledge in their own way
- Metacognitive activities (reflection)

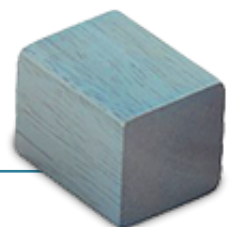


4.2 Differentiation

As previously stated, the purpose of this course is to help student-teachers, as well as newly-appointed teachers learn how to differentiate course content effectively to meet the unique learning needs of their students. “Differentiated instruction (DI) is based on the idea that because students differ significantly in their strengths, interests, learning styles, and readiness to learn, it is necessary to adapt instruction to suit these differing characteristics. One or a number of the following elements can be differentiated in any classroom learning situation:

- the content of learning (what students are going to learn, and when);
- the process of learning (the types of tasks and activities);
- the products of learning (the ways in which students demonstrate learning);
- the affect/environment of learning (the context and environment in which students learn and demonstrate learning).

“An understanding of students’ strengths and needs, as well as of their backgrounds and life experiences, can help teachers plan effective instruction and assessment. As teachers develop and deepen their understanding of individual students, they can respond more effectively to the students’ needs by differentiating instructional approaches – adjusting the method or pace of instruction, using different types of resources, allowing a wider choice of topics, even adjusting the learning environment, if appropriate, to suit the way their students learn and how they are best able to demonstrate their learning.” (The Ontario Curriculum, Grades 9-12, Social Sciences and Humanities, 2013, pg. 35).



5. Course Format

The course will offer the following instructional strategies:

- **Direct Instruction:** lectures, guided reading and listening, structured overview, review of key concepts, purposeful sequencing of material, scaffolding
- **Indirect Instruction:** reading for meaning, concept brainstorming and mapping, reflective discussion
- **Interactive Discussion:** class discussions, cooperative learning, questioning, role-playing, reading for meaning, free-writing, virtual journal

The two final units will be differentiated. Students will have Individual Education Plans with the following considerations:

Instructional Accommodations:

- Differentiated assessment choice
- Provide enrichment activities such as supplementary readings
- Check discreetly for comprehension
- Allow opportunities for Orbital studies
- Provide templates or lists for more complex tasks

Environmental Accommodations

- Conferencing with student for clarification
- Proximity seating
- Touch base/check in
- Corrective feedback completed privately



Assessment Accommodations

- Extra/Processing time

6. Activities

LESSON TOPICS	TIME FRAME
Introduction to Constructivism	2 periods (160 minutes)
Introduction to Differentiation	3 periods (240 minutes)
Where To Begin: Getting to know your students. <ol style="list-style-type: none">1. Student readiness2. Interests3. Learner profile (IEP)4. Learning style5. Gender6. Culture	5 periods (400 minutes)
Focus on Differentiated Instruction <ol style="list-style-type: none">1. Learning materials (content)2. Ways of learning (process)	5 periods (400 minutes)
Focus on Differentiated Assessment <ol style="list-style-type: none">1. Ways of demonstrating learning (product)	5 periods (400 minutes)



7. Lesson Plans

Note: The following two detailed lesson plans are to illustrate the types of lessons that would constitute the overall module

Course: Different Differentiation: A Constructivist Approach

Course Instructors: Shèrida Scott and Renato Carvalho

Lesson 1: Introduction to Constructivism

LESSON OBJECTIVES

- Introduce students (Faculty of Education students) to the following principles of constructivism:
 - Teacher as facilitator and Student as expert
 - Learning is constructed through experience
 - Learning is interactive, collaborative and exploratory
 - Visible thinking activities are utilized
 - Learning is scaffolded
 - Learning environment is structured so that students are engaged in inquiry
 - Students are given time to learn at their own pace and construct knowledge in their own way
 - Metacognitive activities (reflection)
 - To have students discuss in student-directed groups the strengths and weaknesses of the constructivist approach
 - Have students engage in collaboration
 - Have students reflect on their strengths and weaknesses as group members
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STUDENT OBJECTIVES (OUTCOMES)

Students will be able to...

- **Describe** constructivist principles
- **Identify and describe** strengths and weaknesses of the constructivist approach
- **Participate** in collaborative activities in a responsible and mature way
- **Construct** activities which incorporate constructivist principles



ACTIVITIES

I. Minds On

Lesson Introductory Activity: Word Clouds or Mind-Maps! (20 minutes)

1. Students will be placed in mixed ability groups for this activity.
2. Students will have 20 minutes to discuss ideas and write ideas on large piece of magnetic chart paper or create WordCloud
3. Upon completion of answers, students will place magnetic chart paper on the interactive whiteboards located around the room; students will rotate around the room, reading the ideas etc. of the other groups.
4. This activity will end with a full class discussion of all group ideas. Students who have completed a word cloud will project their clouds on the interactive whiteboards as well

Teacher Prompt: “When you disagree with the ideas of a classmate, how do you respectfully communicate your position?” (Ontario Curriculum, English, Grades 9-12 (2007), pg. 92.)

II. Action

Lesson Body (30 minutes)

Interactive Group Activity

1. Students will be continue to work in groups and will complete a reading on a selected principle of constructivism. Students will be also encouraged to create a name for their group.
2. Students will work together to identify key points form their required reading and create a synopsis on either GoogleDoc or WikiSpace that showcases the essential nuances of the article. Students who are familiar with GoogleDocs and/or Wikispaces will be designated as “Leads” for this portion of the activity.

Example:

Group 1: Constructivist Principle -Teacher as Facilitator and Student as Expert

Group 2: Constructivist Principle – Scaffolding

Group 3: Constructivist Principle - Learning is interactive, collaborative and exploratory

Group 4: Visible thinking

3. Upon completion of their GoogleDocs and Wikispace group work, students will embed links to their documents via Blackboard. Students will spend time reading and reviewing the work of the other groups
4. The following lesson will engage students in identifying and explaining the key components of various constructivist principles.



III. Consolidation and Connection

Concluding Activity (10 minutes)

Personal Reflection: Students will take the last ten minutes of the lesson to reflect on their learning and contribution to the group. Students will also note three pieces of information about Constructivism they did not know prior to the lesson.

Teacher Prompt:

- a. What aspects of the group activities did you contribute to?
 - b. Did you actively listen and support your group members?
 - c. What specific speaking strategies are most effective in eliciting responses from your peers in a group discussion? (Ontario Curriculum, English, Grade 11-12 (2007). Pg. 140).
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MATERIALS

- Virtual Journals
 - QuickTime Audio
 - GoogleDocs
 - Wikispaces
 - <http://worditout.com/word-cloud/make-a-new-one>
 - <http://www.designorate.com/how-to-use-mind-mapping>
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RESOURCES

- Ontario Ministry of Education (2007). Ontario Curriculum, English Grades 11-12.
- Phillips, D.C. "The Good, the Bad, and the Ugly: The Many Faces of Constructivism."
- Jonassen. David, Chad Carr and Hsiu-Ping Yueh. "Computers as Mindtools for Engaging Learners in Critical Thinking." TechTrends. 43.2 (March 1998): 24-32.
- Ontario Ministry of Education (2010). Growing Success: Assessment, Evaluation and Reporting in Ontario Schools.
- Ontario Ministry of Education (2013). Learning for All: A Guide to Effective Assessment and Instruction for all Students, Kindergarten to Grade 12.
- <http://www.designorate.com/how-to-use-mind-mapping/>
- <http://worditout.com/word-cloud/make-a-new-one>



Course: Different Differentiation: A Constructivist Approach

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Lesson 2: **Introduction to Differentiation**

LESSON OBJECTIVES

- To **overview** differentiated instruction and assessment for Faculty of Education students
 - To **introduce** Faculty of Education to differentiation by content, process, product, learning style, readiness and interest
 - To have students **engage** in various forms of differentiated instruction
 - To have students **construct** differentiated assessment
 - To **recognize** and **explain** characteristics of their own learning style
 - To have **reflect** on their what method of differentiation best suits their individual needs
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STUDENT OBJECTIVES (OUTCOMES)

Students will be able to...

- **Describe** nuances of differentiated instruction and assessment
 - **Identity** and **explain** the differences in differentiation by content, process, product, learning style, readiness and interest
 - **Collaborate** with peers in a respectful manner
 - **Apply** knowledge of differentiation to creative activities
 - **Explain** the different learning styles
 - **Reflect** on their own learning styles
 - **Connect** their own learning style to a mode of differentiation best suited to their learning needs
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ACTIVITIES

I. Minds On (5 minutes)

Shoulder Buddy: Students will be asked to spend 5 minutes discussing what they know about differentiation. Students will also discuss with their “shoulder buddy” what they feel is their own unique learning style.



II. Action

Lesson Body (60 minutes)

Multi-Media Differentiation Galleries

For this activity the classroom will be set up in different stations, or learning galleries. Each gallery will feature various online interactive tools on different facets of differentiated instruction and assessment. Students will “activate” and explore each gallery at their own pace. At the end of each gallery, students will note the information that learned using a QuickTime recording.

Galleries

- Differentiated instruction and assessment: A Synopsis
- Differentiation by content
- Differentiation by process
- Differentiation by product
- Differentiation by student interest and readiness
- Introduction to learning style theories and how to differentiate according to learning style

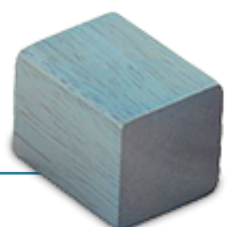
III. Consolidation and Connection

a. Giant Super Sticky Activity (10 minutes)

After all students have explored all Multi-Media Differentiation Galleries, students will be given a HUGE giant sticky. On their sticky note, students will describe three aspects of differentiation they found interesting and why. Students will “stick” their GIANT STICKIES on the whiteboards around the classroom – then all students will rotate around the room to compare and contrast each other’s ideas.

b. Departure Card (5 minutes)

Students will spend the last five minutes of the lesson filling out a “Departure Card” –cards will be collected by teacher as students leave the class.



MATERIALS

- Giant sticky notes
 - YouTube clips
 - QuickTime
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RESOURCES

- Ontario Ministry of Education (2013). Learning for All: A Guide to Effective Assessment and Instruction for all Students, Kindergarten to Grade 12.
- Key Principles of High-Quality Differentiation
- The Differentiated Instruction Scrapbook
- https://umanitoba.ca/student/academiclearning/media/Learning_Styles_NEW.pdf



8. Assessment

Assessment in this course will take the following forms:

Assessment FOR learning

- Brainstorming
- Mind maps
- Discussion
- Reflections/ Virtual Journals
- Shoulder Buddy
- Discussion
- WordClouds

Assessment AS learning

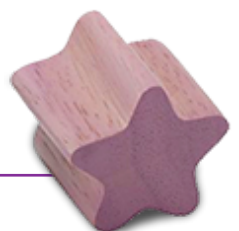
- Observation
- Anecdotal notes - students' roles in group performance, contribution to groups
- Teacher/Student Conferencing - individual conferencing with student and teacher
- Peer Conferencing
- Self-reflection

Assessment OF learning

- Departure cards
- Reflections

Plans for Co-Constructing Assessments with students

- Subsequent lessons would engage student in co-creating an assessment rubric with teacher



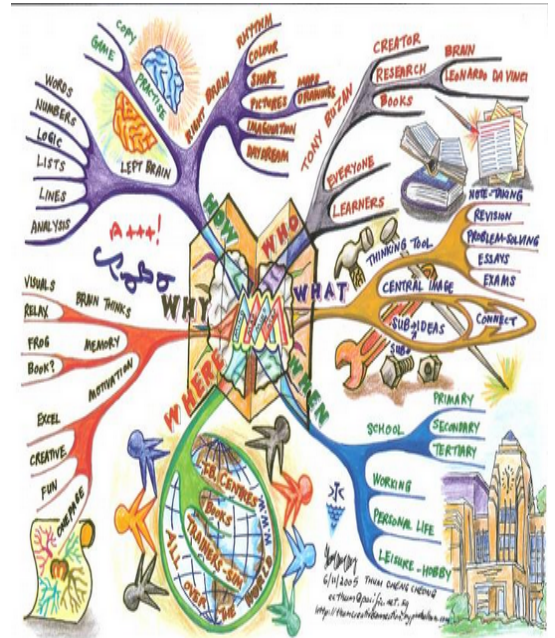
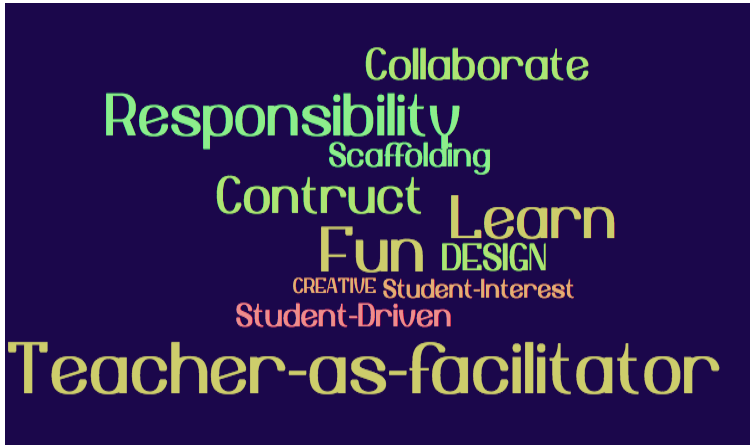
9. Conclusions

Both authors of this project are advocates of constructivism as well as differentiation and, as such, we were excited to work on this project together. When we were discussing how to design the project, we felt that because our target audience was prospective teachers (Faculty of Education students) and newly appointed teachers, it was imperative to include in our course outline principles required by the Ministry of Education. For example, assessment and evaluation, as well as lesson planning, should reflect principles set forth in Ministry of Education documents. Hence, *Growing Success: Assessment, Evaluation and Reporting in Ontario Schools, Learning for All (2013)* and the *Ontario Curriculum (English 2007, Social Sciences and Humanities 2013)* are featured in our course outline. Throughout the creation of this course of study, we gained a new appreciation for constructivism; this pedagogical approach is a natural fit for teaching differentiation because both are very student-driven and focus on the unique needs of students. Constructivism is also a pedagogical approach we feel teachers should infuse into their curriculum. Constructivism offers students independence, engagement, empowerment and, ultimately, a better understanding of themselves and others. The creation of this course of study outline underscored for us both how powerful constructivist approaches to differentiation can be, and how the employment of this pedagogical model can offer students an authentically transformative educational experience – working on this project was most rewarding for us both, indeed!!

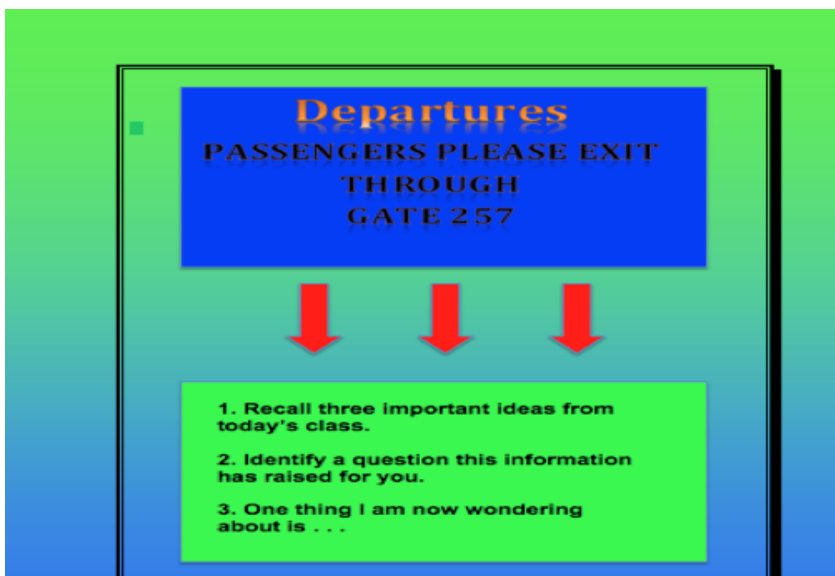


10. Appendices

Appendix 1: Example of Word Cloud and Mapping: (What Do You Know About Constructivism)



Appendix Two: Departure Card



11. References

Jonassen. David, Chad Carr and Hsiu-Ping Yueh. "Computers as Mindtools for Engaging Learners in Critical Thinking." *TechTrends*. 43.2 (March 1998): 24-32.

Ontario Ministry of Education (2010). *Growing Success: Assessment, Evaluation and Reporting in Ontario Schools*.

Ontario Ministry of Education (2007). *Ontario Curriculum, English Grades 11-12*.

Ontario Ministry of Education (2013). *Learning for All: A Guide to Effective Assessment and Instruction for all Students, Kindergarten to Grade 12*.

Ontario Ministry of Education. (2013). *Ontario Curriculum, Grades 9-12, Social Sciences and Humanities*, 2013, pg. 35).

