



Clever Activities To Promote Active Learning

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Today's Speakers



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Disclosure

Speakers agree that neither they nor members of their immediate family have any financial relationships with commercial entities that may be relevant to their presentations.

Learning Objectives

In completing this webinar participants will be able to:

- Discuss the relationship between the active learning and knowledge comprehension
- Appraise current curriculum to determine need for active learning
- Identify novel active learning activities

Overview of Active Learning



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Learning Theory

- Based the theory of constructivism, learning is an active process requiring engagement, effort, and use of previous knowledge in order for ideas to emerge and information to be retained (Dewey, 1910; Piaget, 1971).



Learning Theory

- Novices often struggle to develop expertise from knowledge gained from lecture and memorization (Lee).
- Research in medicine supporting active learning strategies shows that experienced physicians store clinical knowledge as specific cases with associated scripts about the illness/condition (Irby).



Learning Theory

- Students report they enjoy active learning experiences and learn from them (Lee).



Image from Prof. Rothmund's Histology & Embryology
Course Fall 2021

Active Learning

- With increased focus on accountability, assessment, and best practices for teaching diverse student populations, active learning strategies must be considered to help students gain in-depth knowledge (Fink; Ziegenfuss).
- Aspirations toward high level learning outcomes, including critical thinking and problem solving, requires engaging students in hands-on projects (Lee).



Image from Prof. Rothmund's Histology & Embryology Course Fall 2021

Audience Chat

- Share a fun active learning activity or experience you have had at any point in your life.
- How did it inspire creativity and promote deeper understanding?



Active Learning Activities

Clinic



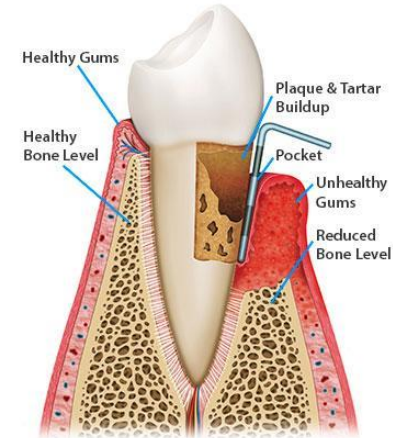
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Comprehensive Senior Case Study (CSCS)

CSCS

Semester	Minimum Sections Due
Summer: Clinic II	Background, Assessments *Homecare and Motivational Interviewing should be ongoing each semester
Fall: Clinic III	Diagnosis/Plan, NSPT and previously completed sections *Homecare and Motivational Interviewing should be ongoing each semester
Spring: Clinic IV	PSE and/or Perio Mnt and previously completed sections *All sections due – turn in entire completed template

Comprehensive Senior Case Study (CSCS)



PURPOSE: determine and complete all necessary treatment, and patient interventions, within the dental hygiene scope of practice for one case study patient utilizing ADPIED and the ADHA Standards for Clinical Dental Hygiene Practice.

ADHA Standards for Clinical Dental Hygiene Practice:

<https://www.adha.org/resources-docs/2016-Revised-Standards-for-Clinical-Dental-Hygiene-Practice.pdf>

CSCS Template

(based on ADPIED)

- Template

<https://docs.google.com/presentation/d/1k2NorWLnsuzGD-j-v4IxT53dmF2RgfJJ/edit?usp=sharing&ouid=102028936514347750014&rtpof=true&sd=true>

General Guidelines (2 slides)

Background (6 slides)

- Medical Hx
- Medications
- Dental/Social Hx
- Oral-systemic Link
- Patient Needs Assessment
- Consideration for Treatment

Assessments (ADPIED)(8 slides)

- Radiographs
- FM intraoral photos
- Images of study models
- PASS Score
- Perio Chart
- Calculus chart
- CAMBRA/Caries Assessment (CRA)
- Disease Assessment (DRA)

Example of a Direction Slide from the CSCS Template:

Patient Needs Assessment

Evaluate the patient for the following and discuss your rationale for why this is a need:

- Cessation – tobacco, vaping, cannabis
- Nutritional Counseling
- Home Care Instruction Plan
- Referrals – medical, dental, perio....etc.
- Dental/Health Literacy Education – fluoride, xylitol, etiology of decay and/or perio
- other

Use additional slides as needed

Remove this direct slide in your final PPT

Student Examples

Patient Needs Assessment

Tobacco cessation counseling

- High risk for oral cancer

Home Care

- Infrequent care
- High calculus level

Increase frequency of DHT

- Has not seen a dentist in several years

Nutritional counseling

- Drinks soft drinks daily
- Eats out frequently for lunch and breakfast

Dental/Health Literacy Education

- Low dental IQ

CSCS Template

(continued)

Diagnosis/Plan (ADPIED) (5 slides)

- Perio Status and diagnosis
- Rationale for Treatment
- NSPT Treatment Plan
- **NSPT Video** - including media release
- Homecare Aids – ongoing throughout CSCS

NSPT (ADPIED)

- NSPT reflections – 1 for each appointment

Motivational Interviewing

- **MI Video** - CSCS must contain at least one behavioral change facilitated through MI, but should address ALL patient needs

PSE/Re-evaluation (ADPIED)

Periodontal Maintenance (ADPIED)

Student Examples

NSPT REFLECTION - APPOINTMENT 3

By this appointment, I was finally ready to begin debridement after I completed my impressions and video. I decided to start on the quadrant with the most natural teeth. The first challenge I came upon with this appointment was getting this patient numb. I administered an IA, B, L block with 2% lidocaine. As it turned out, he felt barely any numbness. So, the instructor and I had to troubleshoot and think of a solution to this, to which we decided to follow up with a second IA block with 3% mepivacaine plain. This seemed to help much better and got him numb. However, towards the end of the quadrant when I was scaling the anterior, the patient exhibited signs of discomfort. Every time I asked him, he said he was fine and did not want more anesthetic. This was a difficult situation for me since there was nothing I could do if he was refusing to get more anesthetic. I feel like this may have contributed to burnishing calculus on the anterior since it was rushed for the comfort of the patient. The second challenge I had come upon was tenacious calculus on the mesial line angle of his first molar. I scaled a good amount, explored and yet again found roughness. To help my instrument catch onto it better, I decided to use the Hirschfeld file to rough it up and then went in with a rigid Gracey. This smoothed out that line angle eventually. Lastly, the first molar had a grade 3 furcation with moderate calculus buildup inside, so I really needed to focus on using multiple instruments in order to be effective in that area. I ended up using the Quetin file which I had never touched prior to this. It was amazing to see how useful files can be in periodontal pockets with moderate to heavy calculus.

CSCS Rubric

Grading Rubric

<https://docs.google.com/document/d/1tIRA EQS-L0bDbOkI9D3R2Sc0d9B4bu62/edit?usp=sharing&ouid=102028936514347750014&rtpof=true&sd=true>

Comprehensive Senior Case Study Grading Rubric

Semester Due	Criteria	Competent 20pts	Emerging 15 pts	Novice 10 Pts	Incomplete 0 pts
Summer	Background Contains following components: <ul style="list-style-type: none"> • Med HX • Medications • Dental/Social HX • Oral-Systemic Link • Pt Needs Assessment • TX Considerations 	Contains all component (6) with detailed information relevant to patient's health and determination of treatment needs *5 point deduction will be assessed for lack of detail	Contains most components (4-5) with detailed information relevant to patient's health and determination of treatment needs *5 point deduction will be assessed for lack of detail	Contains some components (2-3) with detailed information relevant to patient's health and determination of treatment needs *5 point deduction will be assessed for lack of detail	Contains few components (0-1) and may or may not lack detailed information relevant to patient's health and determination of treatment needs
Summer	Assessment Contains following components: <ul style="list-style-type: none"> • Radiographs • FM Intraoral photos • Images of study models • PASS Score • Perio Chart • Calculus Chart • DRA • CRA • Additional TX 	Contains all 8 components with detailed information relevant to patient's health and determination of treatment needs *5 point deduction will be assessed for lack of detail	Contains most components (6-7) with detailed information relevant to patient's health and determination of treatment needs *5 point deduction will be assessed for lack of detail	Contains some components (4-5) with detailed information relevant to patient's health and determination of treatment needs *5 point deduction will be assessed for lack of detail	Contains few components (0-1) and may or may not lack detailed information relevant to patient's health and determination of treatment needs
Fall	Diagnose/Plan Contains following components: <ul style="list-style-type: none"> • Perio Status • Perio Diagnosis • Recommended TX w/ Rationale • NSPT TX Plan • NSPT Video w/ media release 	Contains all 5 components with detailed information relevant to patient's health and determination of treatment needs; contains NSPT Video and Media release	Contains most components (4) with detailed information relevant to patient's health and determination of treatment needs; contains NSPT Video and Media release	Contains some components (2-3) with detailed information relevant to patient's health and determination of treatment needs; contains NSPT Video and Media release	Contains few components (0-1) and may or may not lack detailed information relevant to patient's health and determination of treatment needs AND/OR Missing NSPT Video or Media

Student Examples

- https://docs.google.com/presentation/d/1uElxYPDM27DIW97ZHoGqIRbV3_pQsKDE/edit?usp=sharing&ouid=102028936514347750014&rtpof=true&sd=true
- https://docs.google.com/presentation/d/1uL8q1yaPeCjyhGCAvxO9fClGw3l1_Agp/edit?usp=sharing&ouid=102028936514347750014&rtpof=true&sd=true
- https://docs.google.com/presentation/d/1uExHcOGHZP9Kd_Hj9oDBiYajWdmsYspL/edit?usp=sharing&ouid=102028936514347750014&rtpof=true&sd=true

Active Learning Activities

Anatomy



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Skull Project:

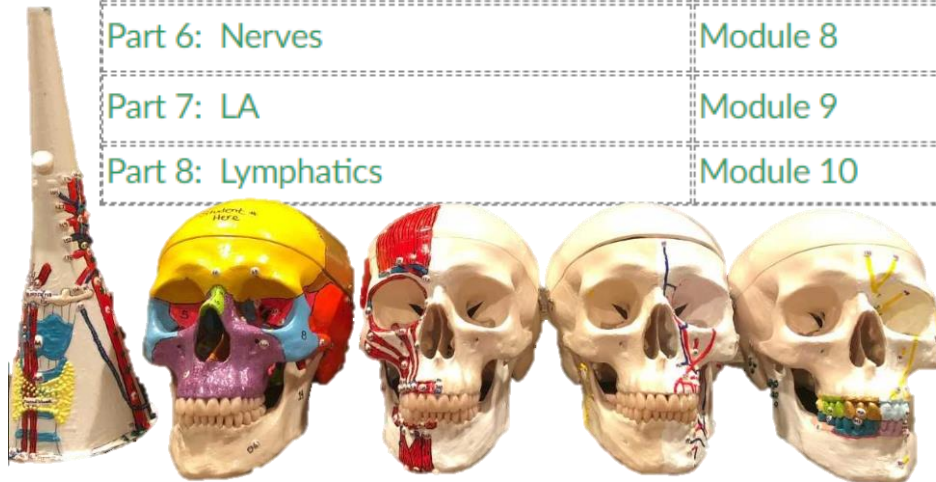


Skull Project:

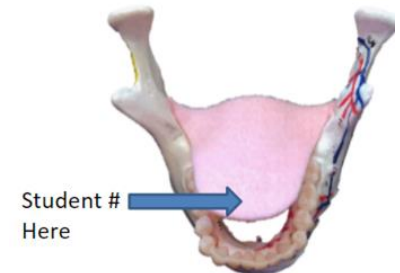
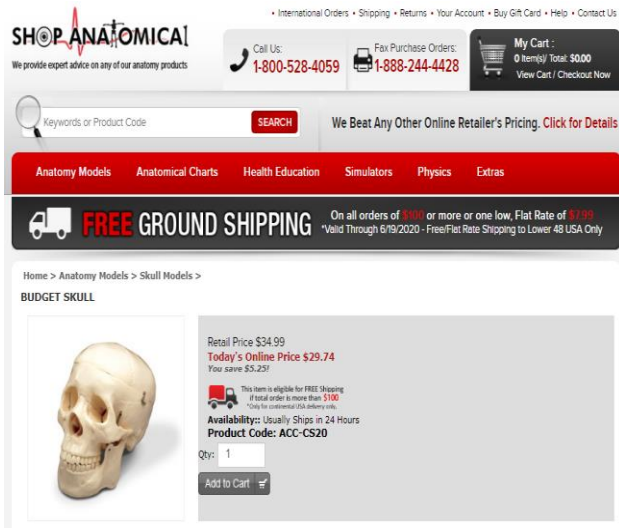
- Introduction to project and supplies:

<https://docs.google.com/presentation/d/18l9sQpEzSPLNETo plagkMYllgMCdjZWj/edit?usp=sharing&ouid=102317293185551645203&rtpof=true&sd=true>

Part 1: Bones	Modules 2 & 3
Part 2: Muscles	Module 4
Part 3: TMJ	Module 5
Part 4 A & B: Vascular	Module 6
Part 5: Glands	Module 7
Part 6: Nerves	Module 8
Part 7: LA	Module 9
Part 8: Lymphatics	Module 10



Skull Project: Affordable Model



- https://www.shopanatomical.com/ProductDetails.asp?ProductCode=ACC-CS20&Click=26683&gclid=EAlaIQobChMIgM7h94rE6QIVixatBh2fLwQVEAQYAyABEgJpBPD_BwE
- The EWU Dental Hygiene Program includes these as part of student issue, fall semester junior year. Students are assigned a number to label their frontal bone for anonymity.
- The long funnel, used for neck anatomy, is purchased from the Dollar Store and painted white.
- A pink felt tongue is provided by the course instructor; cut out of felt from hobby/fabric store

Skull Project:

- This project is graded by the instructor several times throughout the semester using the “skull project rubric”
- Students submit a YouTube link to Canvas in which they point out each landmark/structure

Student Name:

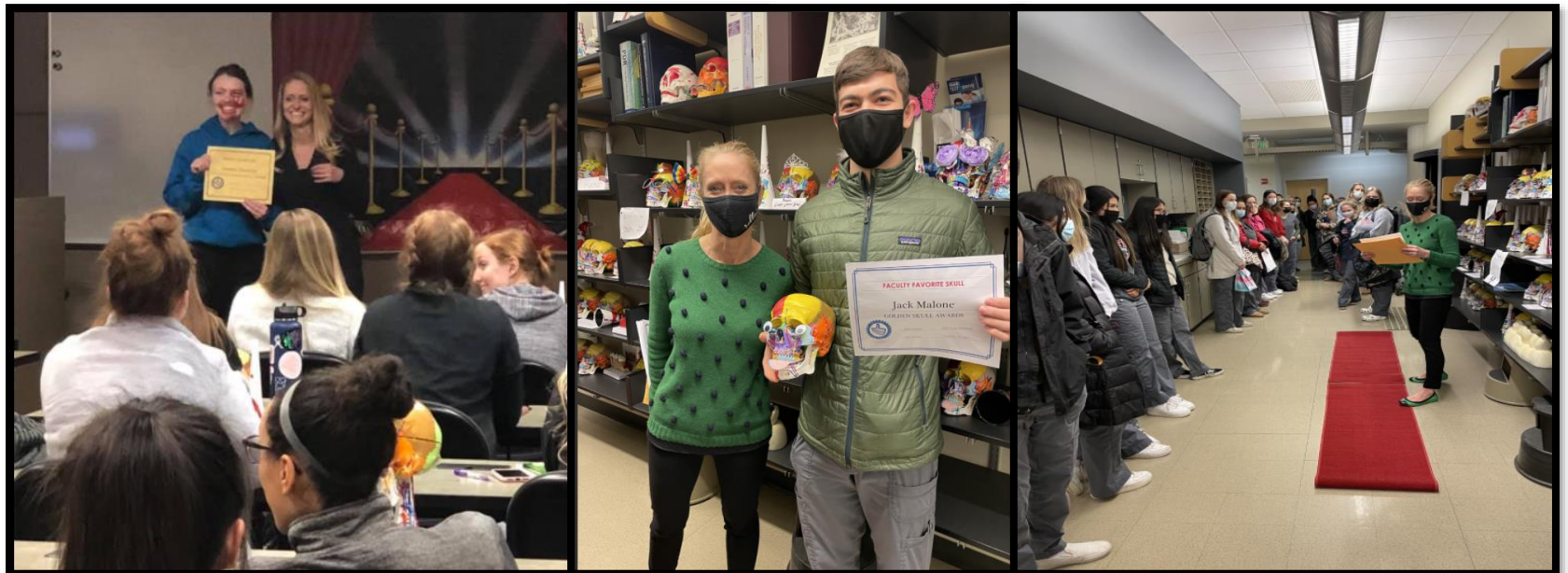
Part: #

Grade:

Abilities	Competent (3 pts)	Novice (2 pts)	Beginner (1 pt)
Complete	All relevant anatomical components presented on the video are present	Most relevant anatomical components presented on the video are present	Few relevant anatomical components presented on the video are present
Accurate	All anatomical components are painted in the accurate location	Most anatomical components are painted in the accurate location	Few anatomical components are painted in the accurate location
Medium	All anatomical components are painted the correct color and with the correct medium (acrylic/puffy paint)	Most anatomical components are painted the correct color and with the correct medium (acrylic/puffy paint)	Few anatomical components are painted the correct color and with the correct medium (acrylic/puffy paint)
Labels	All components are correctly labeled	Most components are correctly labeled	Few components are correctly labeled
Appearance	Overall appearance of skull in clean and without significant smudges or scratches	Overall appearance of skull has some significant smudges or scratches	Overall appearance of skull has several significant smudges or scratches

Skull Project:

- At the end of the semester all skulls are evaluated/voted on by all faculty, staff, and junior/senior students via ballot.
- Winners in several categories receive awards at the “Golden Skull” Awards Ceremony; extra credit is awarded to winners



Skull Project: Resources

- Link to Full Dropbox Files with all PPTs, certificates, and labeling key master list for “Skull Project 2020”:

<https://www.dropbox.com/sh/p16bchc94trs299/AADNaKpdvZWIFlrC4FqeBsEoa?dl=0>

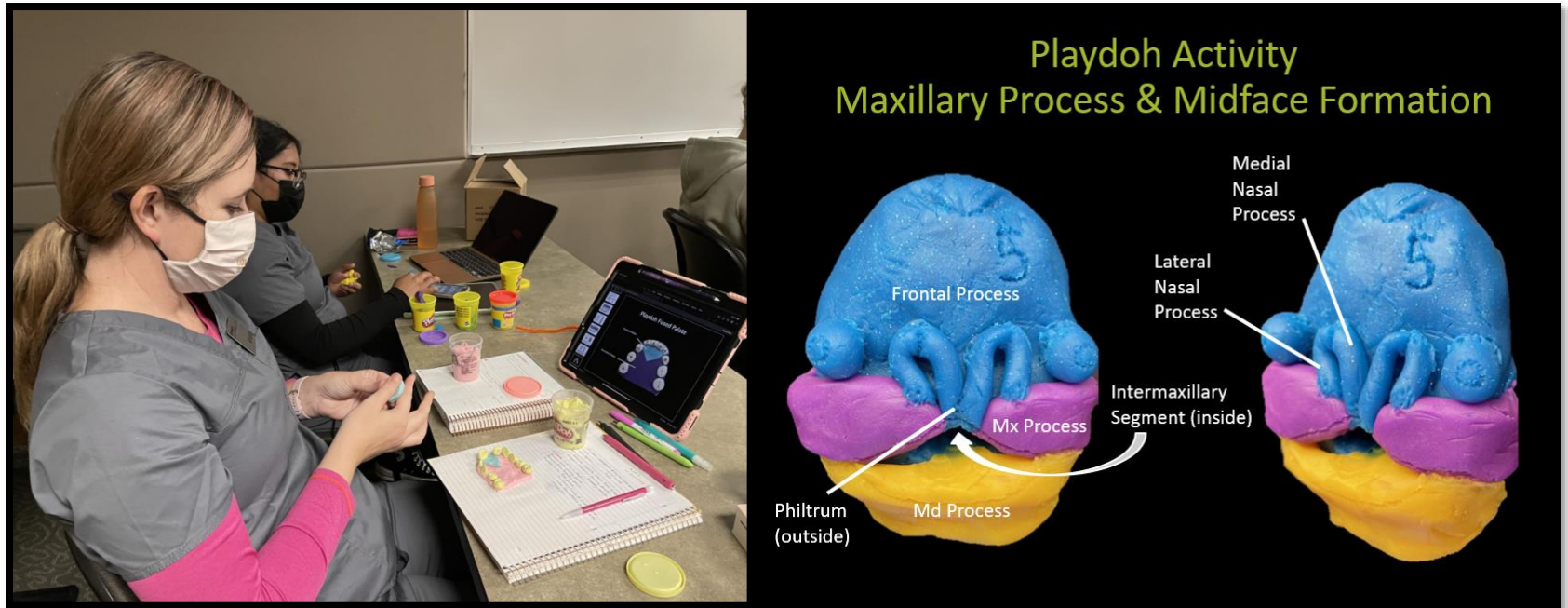
- Link to flyer:

<https://docs.google.com/document/d/1Jcmo1apD1OkfPrD-5odblfetlKNILztx/edit?usp=sharing&oid=102317293185551645203&rtpof=true&sd=true>

- Link to ballot:

<https://drive.google.com/file/d/1I5wwjuINQGjx2cF6HLV k0uI4TF5yCdEq/view?usp=sharing>

Playdoh Histology Embryology



- Link to Playdoh Face & Neck Development PowerPoint:
https://docs.google.com/presentation/d/1d5FwjbyxPmdP21gLSy_-A7NJgNk1w8zo/edit?usp=sharing&ouid=102317293185551645203&rtpof=true&sd=true

Active Learning Activities

Radiology



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Tube Head Project



- Link to tube head project supply list:
<https://drive.google.com/file/d/1cchaYWG2Q0AZ43fk3S7Bihs wxDEDTrWK/view?usp=sharing>
- Link to tube head project labels:
<https://drive.google.com/file/d/1cbWHK1vChuGLxUvLo99F3sOwcBoChpMc/view?usp=sharing>
- Link to tube head project PowerPoint:
<https://docs.google.com/presentation/d/1cdPcFj2CvVRHRzYGV82ny16h2ygNzZrr/edit?usp=sharing&ouid=102317293185551645203&rtpof=true&sd=true>

Active Learning Activities

Radiology

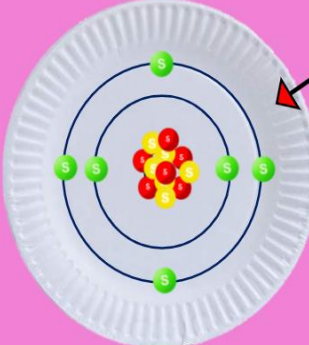


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X-ray Interactions Skittle Activity

In-Class Activity

- Use paper plate & skittle atom to demonstrate x-ray interactions





Let's keep it simple:

- Draw two circles as inner & outer shells
- Choose any 3 colors of skittles and assign as protons, neutrons, electrons
- DO NOT eat the skittles
- Your finger will act as the bombarding electron x-ray photon (at the anodes) & x-ray photon (at the patient)

Tungsten

- Chemical Symbol: W
- Atomic Number: 74 protons & neutrons (shells 2, 8, 18, 32, 12, 2)





- Link to Activity PowerPoint:
<https://docs.google.com/presentation/d/1d4Vc0JNfXoNXQ0wihpGL0hkQSfu05UsN/edit?usp=sharing&ouid=102317293185551645203&rtpof=true&sd=true>

Audience Chat

- What projects or activities do you or your program use to promote active learning?



Curriculum: **Where?**

- During your curriculum meeting spread all courses on the table and talk about where creative projects/activities could be implement to benefit students.



Image Source: <https://tuiopay.com/blog/how-to-lead-meaningful-faculty-meetings-6-tips/>

Curriculum: How?

Fink's Backward Design

- In the book, “Creating Significant Learning Experiences: An Integrated Approach to Designing College Courses”, Fink contends that good courses challenge students and use active forms of learning (Fink, p. 32).
- The basic premise of Fink’s Backward Design is to focus on course design and start by considering the student outcomes you would like to obtain (Fink).

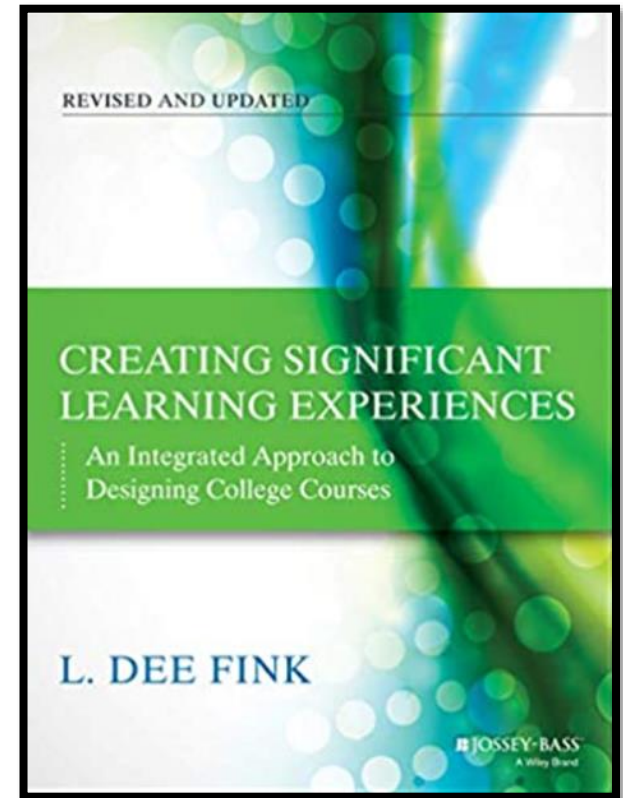


Image source: Amazon.com

Fink's Backward Design

Ask yourself the following questions to guide assessment activities: (Fink, Gadbury-Amyot)

1. What do you want students to learn in your course (learning goals)?
2. How will you know learning goals have been achieved and meet necessary competencies (assessment measures)?
3. What course content will enable students to develop the skill set needed to complete activities successfully (modules/lectures)?

Designing Effective Activities

Designing effective activities is rewarding even though it takes time and creativity. So, how do you get started? Lee (2012) proposes following the suggestions below:

1. **Start small:** consider creating a case study for students to review and discuss in small groups during class.
2. **Persist:** if the idea does not go as planned revise it and try again.
3. **Explain:** tell students why active learning activities are used in your course, thoroughly explain the project with detailed directions, solicit student feedback, and monitor progress throughout.
4. **Get advice:** ask colleagues for input on the activity and to ensure instructions are easily understood.
5. **Adapt:** for larger classes, projects can be adapted for in-class or out-of-class assignments

Audience Poll

- Do you feel your curriculum would benefit from the addition of more active learning strategies?

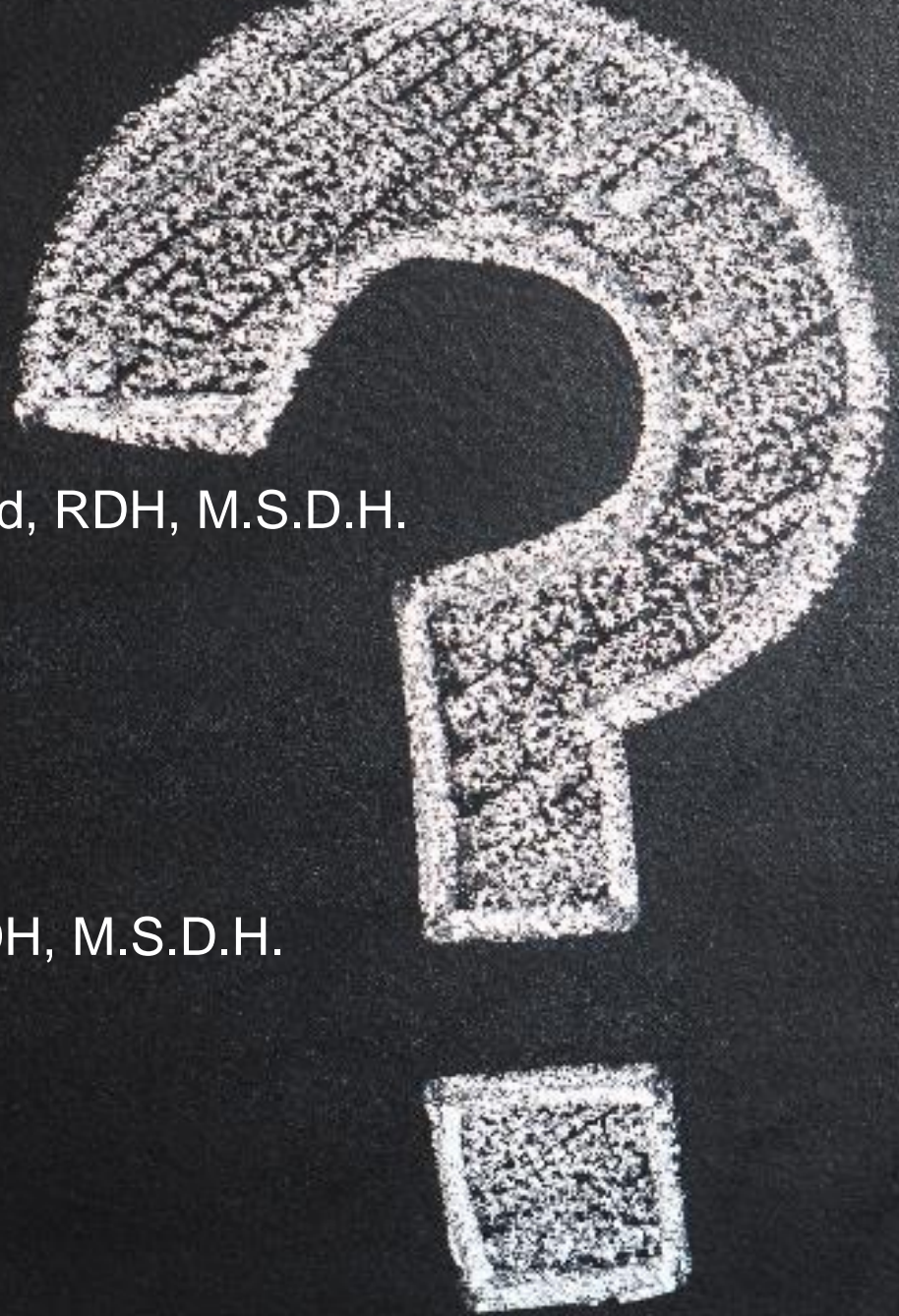
Q&A



Windy Rothmund, RDH, M.S.D.H.



Cheri Barton, RDH, M.S.D.H.



Thank You!

- ✓ Please complete the post-event survey
- ✓ Recording available within a few business days at adea.org/elearn

References

- Dewey, J. (1910). *How we think*. Health & Co. <http://www.worldcat.org/oclc/194219>
- Fink, L.D. (2013). *Creating significant learning experiences: An integrated approach to designing college courses* (2nd ed.). Jossey-Bass. <https://www.worldcat.org/oclc/899180226>
- Gadbury-Amyot, C.C. (2020). Strategies for developing a quality course: Teaching methodologies/faculty development. <https://www.dentalcare.com/en-us/professional-education/ce-courses/ce398/learning-theory>
- Irby, D.M. (1994). What clinical teachers in medicine need to know. *Academic Medicine*, 69(5), 333-342.
- Lee, V. (2012). Involved students in “hands-on” projects such as research, case studies, or real-life activities.
<https://ideacontent.blob.core.windows.net/content/sites/2/2020/02/Involved-students-in-hands-on-projects-such-as-research.pdf>
- Piaget, J. (1971). *Biology and knowledge: An essay on the relations between organic regulations and cognitive processes*. University of Chicago Press.
<http://www.worldcat.org/oclc/666445831>
- Ziegenfuss, D.H. & LeMire, S. (2019). A must-have library instructional design strategy for your pedagogical and teaching toolbox. *Reference & User Services Quarterly*, 59(2), 107-112. <https://journals.ala.org/index.php/rusq/article/viewFile/7275/9985>

ADDITIONAL LEARNING ACTIVITIES

HEAD & NECK ANATOMY: FACE PAINTING

Face Painting

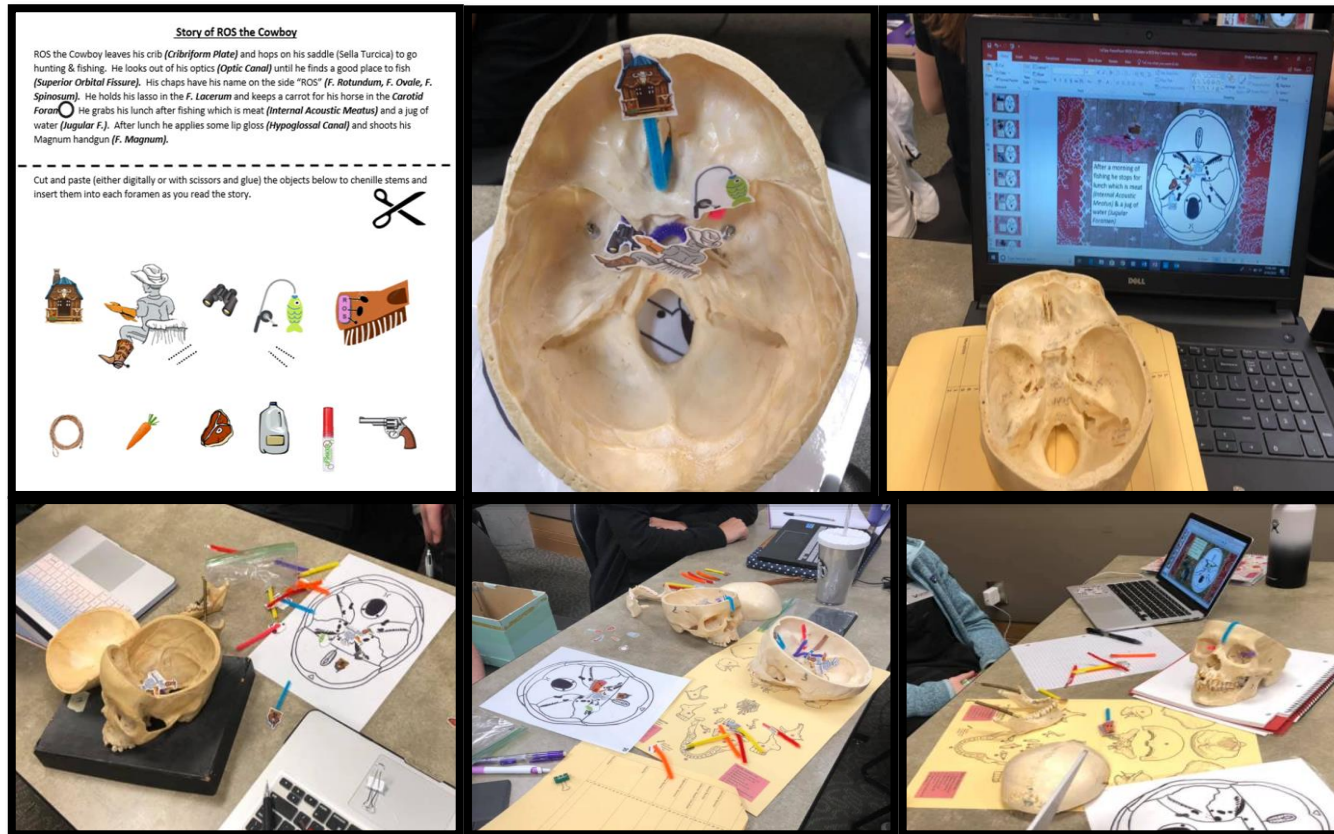


Link to face painting assignment:

https://drive.google.com/file/d/1cWUWR04fVXR_N42VIA2NkjIxmNln4GFA/view?usp=sharing

HEAD & NECK ANATOMY: FORAMEN ACTIVITY

Foramen Activity: ROS the Cowboy



Link to ROS the Cowboy worksheet:

<https://drive.google.com/file/d/1cQHAhH54hhwW5XtYU24vJW4YbLRI-pKZ/view?usp=sharing>

HEAD & NECK ANATOMY: SPACES ACTIVITY

Spaces Activity



- Link to Spaces PowerPoint: <https://docs.google.com/presentation/d/1cWWD9Zw4R-1dxy2-q-72xWITGb4EUo1Q/edit?usp=sharing&ouid=102317293185551645203&rtpof=true&sd=true>
- Link to Spaces Template: https://drive.google.com/file/d/1cVwpfCaITU4ZS_XgYAQvar3mPofZsZST/view?usp=sharing

RADIOLOGY: PATIENT PAMPHLET

Radiology Patient Education Pamphlet



- Link to assignment information:
https://drive.google.com/file/d/1cv0A_jJkh7_B9Fvq_Na0L26s-Z6L1kNT0/view?usp=sharing
- Pamphlet Sample 1:
<https://drive.google.com/file/d/1cxpMS8xK71gd5ZQRKJWR3o0juESjAKbB/view?usp=sharing>
- Pamphlet Sample 2:
<https://drive.google.com/file/d/1dzO4tH6T8TgGLGdzXQccsB9fjC4UC0W/view?usp=sharing>

CLINIC: NBDHE Study Plan

NBDHE Study Plan: Student Preparation for Assignment

—
Review the following preparation resources:

Draft A Study Plan

- <https://spark.parkland.edu/cgi/viewcontent.cgi?article=1205&context=ah>

Using Time management to Improve Study Skills

- <https://www.educationcorner.com/effective-time-management.html> (Links to an external site.)

Tips for Conquering the National Dental Hygiene Board Exam

- <https://www.todaysrdh.com/8-tips-for-conquering-the-national-dental-hygiene-board-exam/>



NBDHE Study Plan

Directions:

- Create a study plan that will help you begin to prepare for the NBDHE
- Design a study plan that meets your individual study style and lifestyle.
- Provide a detailed example of your study plan and include an example calendar showing your study times.
- Answer the following questions in your plan:
 - Will you purchase a study guide from a website? If so, which one are you looking at?
 - Will you take the practice tests on the ADA website (under JCNDE)?
 - Will you use the candidates guide provided by NBDHE to prepare? If so, how?
 - Will you use review textbooks?
- Your plan can be a PowerPoint, WORD doc, Prezi, etc. Be creative

NBDHE Student Examples



STUDY METHODS

- Take evaluation quizzes in Student RDH to assess the areas I need to focus most.
- Use Student RDH to review key topics/points.
- Use Mosby's Board review for quizzes to test if my study methods are working.
- Take practice quizzes on ADA website.
- Use the NBDHE candidate guide to determine what areas to study in each subject.

- https://docs.google.com/presentation/d/1tczC0tS7ES9ImF5e7epAHxrjnPFNm_4r/edit?usp=sharing&oid=102028936514347750014&rtpof=true&sd=true
- <https://docs.google.com/presentation/d/1teQwn9WbcD8YvIAyX4KfMLMVAetzZfkm/edit?usp=sharing&oid=102028936514347750014&rtpof=true&sd=true>
- <https://docs.google.com/presentation/d/1tpwls91CPjrwRN1WoOW16BV8pX8gAnqE/edit?usp=sharing&oid=102028936514347750014&rtpof=true&sd=true>