

DESIGNING A CONSTRUCTIVIST-OCL LEARNING ACTIVITY

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“In this world nothing can be said to be certain, except death and taxes”

Benjamin Franklin (BrainyQuote 2015)

Patients with an advanced illness (e.g., within six months of death) frequently suffer from pain and a variety of non-pain symptoms. While non-pharmacologic interventions may provide some relief, appropriate medication therapy is critically important. Because this patient population is highly vulnerable to medication-induced adverse effects, it is particularly important that medications be carefully selected, dosed, and monitored. Pharmacists play a significant role in this medication management process. The purpose of this article is to describe a constructivist-online collaborative learning (OCL) activity designed for third year pharmacy students, describe the use of technology in executing this learning activity, explain the theory that supports this activity, and to share grading rubrics for this activity.

Learning Activity

The third year of the Pharmacy School curriculum is largely comprised of didactic elective coursework that allows students to pursue their specific interests. One such elective is “Care of the Terminally Ill,” a two credit elective that addresses medication management in

advanced illness (e.g., pain and non-pain symptom control). Our curriculum is transitioning from a solely face-to-face education to a blended approach, supplementing with online activities. The specific learning objectives for this online learning activity are as follows:

- Given an actual or simulated patient with an advanced illness, the student enrolled in the “Care of the Terminally Ill” elective should be able to list data necessary to develop a therapeutic plan including subjective description of complaint(s), imaging data and physical assessment findings.
- Given an actual or simulated patient with an advanced illness, working in a group with three other students enrolled in the “Care of the Terminally Ill” elective, the student should be able to develop a therapeutic plan that includes all elements of the Therapeutic Experiment.

Detailed Outline of the Activity/Lesson and Use of Technology

The purpose of this specific learning activity is for students to independently gather the subjective and objective data base necessary to assess a chief complaint associated with an advanced illness, and to work collaboratively with a group to develop a management plan. Students have learned all necessary background information earlier in their curriculum.

After refreshing their memory of requisite content knowledge, each student will go to the School’s learning management system (Blackboard) where this activity will be posted. A short pre-recorded multi-media presentation (incorporating text, photos and voice, recorded in Camtasia) will be posted. The first Slide will show a picture of a 53 year old woman who looks quite ill. The voice over will be that of the hospice nurse who just admitted the patient (RD). The nurse will state that RD was diagnosed 7 years ago with left breast cancer. The patient received

surgery, chemotherapy and radiation. The patient's breast cancer recurred six months ago and she was determined to be ineligible for further treatment. She has been admitted to hospice with a prognosis of about 3 months. Slide two will also be narrated by the hospice nurse who will share that RD has pain in three different locations: the lower left quadrant of her abdomen, her right hip, and left shoulder stiffness. The nurse will also state that RD is quite unhappy, with multiple concerns and associated symptoms. Slide three will also be narrated by the hospice nurse, asking "what additional subjective and objective information would you like to have to assess these three pain complaints?" The student will upload their response to this question within one week. Each student will receive a grade for this individual effort (see rubric, Appendix A).

After all students have uploaded their individual responses to the case (e.g., what data would you collect?), the complete case with all requisite information will be posted (see Appendix B). Working in assigned groups of 4 students per group, one week will be allocated for the development and submission of a therapeutic plan for the management of the patient's complaints. Their collective work-in-progress will be conducted through use of a wiki (pbworks.com) with one page allocated for each of nine components of the "Therapeutic Experiment" (the model we use at our School of Pharmacy to teach the drug therapy selection process). The group must show evidence of discourse (discussion of the case) on the wiki pages, and consensus must be reached. The instructor will redirect the discussion as necessary, pose questions and provide advice as needed. Students will be graded on the extent of their participation (e.g., discourse) and the correctness of the group's final management plan (see rubric, Appendix C).

How Theory is Integral to the Practice of the Activity

Harasim (2012) stated that “In the constructivist perspective, knowledge is constructed by the individual through his or her interactions with the community and the environment” (p. 60). Further, Harasim states “Knowledge...is constructed and negotiated socially” (p. 60). The use of the wiki, an example of social media, allows learners to work in a community (as a group) and negotiate the resolution to this case socially. Koohang, Riley & Smith (2009) quote Woolfolk (1993, p. 485) stating that “Learning is active mental work, not passive reception of teaching.” By completing both the individual and group assignment, learners are performing all mental work; there is no passive transfer of knowledge of teaching in this exercise. Koohang and colleagues (2009) further elaborate on collaborative design elements for learning activities to include the learner’s collaborating, cooperating, bringing different and multiple perspectives and representations to the table, and social negotiation among the group (p. 94). The group activity as designed incorporates all five elements as described by Koohang et.al.

Regarding effective online instruction, Hacker and Niederhauser (2000) provide five guidelines to promote student learning outcomes. These include: student active participation, use of examples, collaboration in problem solving, providing feedback and motivating students. The group activity as described here, using online technology, meet all five criteria. Lewis and Abdul-Hamid (2006) provide examples of exemplary online teaching in three primary areas: fostering interaction, providing feedback, and facilitating learning (pp. 87-94). Again, the group activity described here meets the models of excellence these authors discuss in their research.

Conclusion

Constructivism speaks to the concept of students constructing their own knowledge, not passive receipt of knowledge. Harasim (2002) outlines three intellectual phases of the online

collaborative learning (OCL) theory: idea generating, idea organizing and intellectual convergence (p. 93). Using web 2.0 (learning management system and social media), this paper describes a learning activity that exemplifies both constructivist and OCL theory, solidifying the learner's ability to garner information necessary to evaluate the symptoms of a patient with an advanced illness, and to work collaboratively to effect case resolution.

References

Benjamin Franklin quote. (2015).

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Appendix A – Rubric for Individual Work

Criteria	Outstanding (100% of points)	Acceptable (80% of points)	Unacceptable (0% of points)
Subjective assessment of pain complaints	Requested all eight elements of symptom analysis for all three pain complaints	Requested all eight elements of symptom analysis for 2 of the pain complaints	Missing one or more element of the symptom analysis, or only assessed one of the pain complaints
Imaging data requested	Requested all minimally necessary imaging data	Requested some minimally necessary data, and/or requested unnecessary data	Did not request any necessary data, and/or all data requested was unnecessary
Physical assessment data requested	Requested all minimally necessary physical assessment data	Requested some minimally necessary physical assessment data, and/or requested unnecessary physical assessment data	Did not request any necessary physical assessment data, and/or all physical assessment data requested was unnecessary
Critical thinking	Successfully correlated request for physical assessment and imaging data for all 3 pain complaints	Successfully correlated request for physical assessment and imaging data for 2 of the 3 pain complaints	Incorrectly requested physical assessment and/or imaging data two or more of the 3 pain complaints

Appendix B – Case Presentation

Care of the Terminally Ill Fall 2015

RD is a 53 year old woman diagnosed 7 years ago with left breast cancer (19 mm Grade III Invasive Ductal Carcinoma, 2/13 lymph nodes positive). She received surgery (left wide local excision and sentinel lymph node biopsy; subsequent completion axillary clearance), chemotherapy and radiation. She was placed on tamoxifen 20 mg po qd x 5 years. Patient experienced a recurrence of her disease six months ago (metastatic liver cancer) and was determined to be ineligible for further treatment. She has been admitted to hospice with a prognosis of approximately 3 months.

CC/HPI:

On admission to hospice, RD has multiple pain complaints.

The first pain she describes is in her lower abdomen quadrant, and is presently constantly. She describes the pain as deep and “gnawing.” Nothing seems to exacerbate the pain, except possibly constipation, and nothing non-pharmacologic has relieved the pain (she’s tried repositioning, application of heating pad and meditation). She states the pain doesn’t move to any other locations. She rates the pain as an average of 5 when she takes her pain medication, a best of 4, and a worst of 8 (all on a 0=no pain; 10=worst imaginable pain scale). The pain prevents her from getting comfortable at night and getting a good night’s rest. She takes the oxycodone/acetaminophen tablets prescribed by her oncologist for this pain.

The patient also complains of pain in her right hip. She can point right to the area where she has the pain, and states it doesn’t move anywhere else. Lying on her right side, walking, standing all exacerbate the pain. She states when she lies on her left side, the pain in her right hip is a 2 or 3; when she rolls on her right hip or walks the pain increases to an 8 or 9. The pain dramatically impacts her ability to rest, or reposition (even more so than the abdominal pain). She’s tried a heating pad on her hip also with negligible relief. The pain medication helps somewhat, but lying perfectly still gives the most relief. The pain never completely goes away, but is primarily present with pressure on the area or movement.

The patient also tells you about a new pain she’s had over the past couple of weeks. She complains of left shoulder stiffness that is present constantly, and pain, weakness and a burning sensation in her left axilla that is present more often than not. In addition, several times a day she experiences a shooting pain down her left arm, leaving her thumb and index finger numb and tingling for an hour or more. She experiences this shooting pain about 3 or 4 times daily. She cannot pinpoint any activities that precipitate this shooting pain, and nothing she’s tried has

relieved it. The oncologist wanted to order an ultrasound guided fine needle aspiration of the left brachial plexus but the patient declined. She rates the stiff shoulder pain as a 4-5 out of 10, and rates the shooting pain a 10/10; it is lightning-bolt fast, and she rates the finger discomfort as a 5 or 6. She is afraid to leave the house or do anything for fear of setting off this extremely uncomfortable shooting sensation.

RD is quite weepy, and is terrified of dying. Her daughter is pregnant and due in six months, and she's worried that she won't live to see the baby. The patient describes feeling anxious and irritable always waiting for "the other shoe to drop" (referring to the shooting pain down her arm). She is no longer engaging in pleasurable activities such as visiting with her other grandchild, a 3 year old boy. She says between the pain and being unhappy she is having a hard time sleeping. She denies any history of mental illness or substance abuse.

PMH :

Diabetes type 2 (5 years)

Chronic kidney disease (7) years.

Current Medications:

Lisinopril 20 mg daily

Metformin XR 1000 mg bid

Calcium + D one tablet daily

Oxycodone 5 mg/acetaminophen 325 mg, 1-2 tablets every 4 hours as needed for pain (patient is taking 2-3 tablets every 3 hours around the clock, even during the night; takes on average 20 tablets per day)

Docusate 200 mg bid

Allergies/previous ADR's : Codeine – causes nausea

Vaccines: up to date with childhood vaccinations; current with flu vaccine and Zostavax

Social history:

Smoking: Denies

Alcohol: Was a social drinker; has not had any alcohol in the past six months

Illicit drug use: Denies

ROS:

GI – complains of reduced frequency of bowel movements, and straining to have bowel movement (which exacerbates hip pain). Bowel movement frequency 2-3 times per week,

describes as Bristol Stool 2. Complains of mild nausea which resolves with bowel movement. Denies nausea at other times, vomiting, dark stools, hemoptysis.

GU – history of chronic kidney disease secondary to chemotherapy; denies painful urination, nocturia, urinary retention or increase in urinary frequency

Musculoskeletal – as described in HPI.

Endocrine – denies appetite changes, cold intolerance, polyuria, polydipsia, polyphagia

Ext – complains of numbness in center of left axilla, and pain surrounding affected area

Physical exam:

Ht/Wt: 5'4", 115 pounds

Vital signs: RR 16, T 98.6

Supine - BP 120/74 mmHg, HR 76 bpm

Standing – BP 118/72 mmHg, HR 78 bpm

General: Slight build, weak in appearance

Psych: Beck Depression Index II – score of 20

Left axilla – center region displays reduced sensation; adjacent areas display allodynia

Objective data

A1c 7.2

Sodium 140, Potassium 4.2, Chloride 100, carbon dioxide 25, serum creatinine 1.6, BUN 24, glucose (random) 144

AST 42 U/L; ALT 56 U/L

EKG – Normal sinus rhythm, no evidence of ischemia, QTc 400 msec

Contrast-enhanced transaxial CT scan in the portal venous phase showed metastases in both lobes of the liver (inoperable)

Appendix C – Rubric for Group Work

Criteria	Outstanding (100% of points)	Acceptable (80% of points)	Unacceptable (0% of points)
Participation in therapeutic experiment discussion	Student had two or more meaningful posts on at least six of the nine wiki pages based on therapeutic experiment	Student had one or more meaningful post on at least six of the nine wiki pages based on therapeutic experiment	Student had no posts, or posted on fewer than six of the nine wiki pages based on therapeutic experiment
Content	Therapeutic plan is correct including selection of medication regimen, and indices of monitoring (therapeutic and toxic)	Therapeutic plan is correct including selection of medication regimen, and contains at least 50% of required indices of monitoring (therapeutic and toxic)	Therapeutic plan is incorrect in terms of selected medication regimen, and/or contains less than 50% of required indices of monitoring (therapeutic and toxic)
Critical thinking	Therapeutic plan reflects incorporation of subjective and objective data provided in case, and is evidence-based	Therapeutic plan incorporates most of subjective and objective data provided in case, and is partially evidence-based	Therapeutic plan is not well correlated to subjective and objective data provided in case, and/or is not evidence-based
Interaction/Learning	Contributions to posts are responsive and embedded in the thread. Student refers to other class members' comments, and provides literature support for recommendations.	Contributions to posts are mostly responsive and embedded in the thread. Responses are meaningful and not tangential.	Contributions do not respond to other learner's posts, are tangential, and/or do not provide literature support.