

Exploration of an Online Case Study Model that Incorporates Critical Thinking Concepts:

A Pilot Study

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Abstract

The purpose of this study is to teach nurses to apply a critical thinking framework linking to case studies online. One hundred and twenty nurses will be asked to volunteer. Nurses will be randomly assigned either to an experimental or control group. The experimental group will discuss and apply a critical thinking framework and the control group will not. It is expected that the qualitative themes emerging from the discussions in the experimental groups will reflect the critical thinking framework. It is also expected that the two scoring quantitative measures will be significantly different between the experimental and control group.

Exploration of an Online Case Study Model that Incorporates Critical Thinking

Concepts: A Pilot Study

A. SPECIFIC AIMS:

Critical thinking is addressed under many different names and reported interchangeable in many circumstances as i.e., problem solving, clinical reasoning, and reflection.

Many educational delivery systems use problem based learning or problem solving to solve clinical problems (Norman & Schmidt, 1992; Albanese & Mitchell, 1993; Feletti, 1993). Feletti and Engel (1980) used essay questions to test problem solving skills that provided a rationale for doing things. In nursing, clinical reasoning has been studied with a model to provide safe care and collect data (Tanner et al, 1987; & Myrick, 2002). Case studies were found to enhance active learning by having the student make connections (Dowd & Davidhizar, 1999). Duffy (1999) studied expert problem solving using case studies. Think a-loud sessions assist the student to critically think by having experts and novices get together (Cocoran et al, 1988). Reflection was found to be important in changing critical thinking or the development of thinking, an awareness or new perspectives learned through experience (Kennison & Misselwitz, 2002; Jarvis, 1992; Atkins & Murphy, 1993; & Glen, 1995).

Therefore, the purpose of this mixed method study is to teach nurses to apply a critical thinking framework through a web based course. The specific aims are to:

1) To measure critical thinking of nurses who have been taught to apply a critical thinking framework in a online course and who have solved nursing cases compared to those nurses who have not been taught the framework for critical thinking, but who have also solved the nursing cases.

2) To identify themes that emerges in the course discussions and case study rationales with both groups of nurses.

3) A future aim is to measure clinical outcomes of the patients that were taught discharge planning by the nurses learning the critical thinking framework.

B. BACKGROUND AND SIGNIFICANCE

This section identifies the importance of critical thinking, literature gaps in evaluation of critical thinking, methods used to teach critical thinking, and use of web based applications.

Critical thinking is a characteristic that distinguishes a professional nurse from the nurse who performs skills only and is one essential criterion used in Baccalaureate Nursing Education. It is necessary to document critical thinking process for accreditation and to document the process used in class for end of year reports. Critical thinking skills are necessary for providing comprehensive and safe nursing care. It is expected that students who graduate from nursing schools will have critical thinking skills when they graduate. Nurses use critical thinking to clinically reason in order to practice sound clinical judgment, problem solve, and reflect on critical clinical decisions.

The largest gap in the literature is **measurement of critical thinking** skills followed by specific identified interventions to teach these skills. Few intervention studies have been published, but Astleitner (2002) did instruct in critical thinking per web-lectures using both video and audio conditions. No explicit critical thinking framework (as proposed) has been taught and then measured. No studies have been found for teaching a critical thinking framework on line coupled with case studies using both an experimental and a control group.

Evaluation of critical thinking from second year to fourth year in nursing students' course of study reveals significant change (McCarthy et al, 1999; Miller, 1992) and after problem based instruction (Magnussen et al, 2000). Martin (2002) studied critical thinking used in clinical decisions and found more experienced nurses and those greater in age had increased scores in critical thinking. When students are paired with clinical educators, partnered with staff nurses, the student's clinical decision making scores were higher than those not paired in this way (Roche, 2002).

Various methods to **teach** critical thinking have been used in nursing education. One common way is to present a case study after a theory lecture and have students solve the case. Another way is to distribute handouts that ask the student to focus on a subject and fill in the blanks and or to list items and or to list gains from the experience. The most

common way that nurses have taught critical thinking is by using the nursing process. The process is a linear problem solving technique that asks for interventions then evaluates of the interventions with adjustments in the care as needed.

Cravener (1999) studied the advantages and disadvantages of **web based teaching** experiences and learning experiences in an effort to understand and prepare for the increasing trend of technology to provide nursing education. Jones (1996) provided a similar study that identified lesson learned during the process of teaching critical thinking abilities to students across disciplines in online classrooms. Leasure, Davis, and Thievon, (2000) conducted a comparative study of student characteristics enrolled in the same research course but in different learning environments. Results indicated no significant differences in either demographic or academic characteristics. Cuellar (2002) reported additional tips to increase the success of online teaching and learning through specified techniques to overcome problems in online education in nursing.

Hayes, Huckstadt, and Gibson (2000) describe faculty workload issues as one of the greatest future challenges for management and delivery of online continuing nursing education. Hayes, Huckstadt, and Gibson (2000) describe the online class environment as demanding more faculty time than a traditional classroom environment.

It is proposed that nurses in practice can gain critical thinking skills through learning an organized framework with application to case studies. The study addresses the lack of accurate and comprehensive critical thinking interventions used in nursing education programs today. The quality of critical thinking skills in practicing nurses, with less than three years of practice, is unknown. The study proposes to measure critical thinking skills gained through the course. Quantitative measures have been demonstrated by concept count and scoring rubric in education using case studies to measure critical thinking skills (Sic et al., 2003). The impact of a critical thinking course and being able to measure the impact of the course is of utmost importance in teaching critical thinking skills to nurses and in nursing education programs.

Critical Thinking Framework

There are three categories that compose the framework of critical thinking. The first, called universal structure, outlines each problem or argument in eight specific organized ways. The second element is called elements of reasoning and asks questions

when reading or writing documents that help clarify what is understood and meant by the reading or written discussion or essay. The third element, called intellectual standards, finalize the check list of problem solving or decision making by self-examination or reflection in order to insure that intellectual elements are followed

Certain elements of these three categories comprise the critical thinking framework. The particular framework elements are called universal structures of thought and are comprised of purpose, question, information, assumption, concept, implication, inference, and point of view (Elder & Paul, 1992). These elements will be presented to the student as the way in which discussions are written and case studies are solved.

The purpose of this study is to propose a design of a web based course that will teach, have students apply, and evaluate critical thinking. The course will be delivered using the following educational model: the course will teach critical thinking through facilitated discussions than include the eight element framework of critical thinking. Second, case studies will be presented using a ‘*think about it*’ link that provides both facilitator and expert assistance. The model will be evaluated using both qualitative and quantitative analysis.

D. RESEARCH DESIGN

The research design is a mixed-method. The quantitative data will be a posttest-only control group design (Allen, 1995). There will be a random assignment of subjects to experimental and control groups, and subjects will be measured after the course.

The design for the qualitative data will be a case study (Creswell, 1994). Case studies explore single entities or phenomenon. The case is bounded by an event or activity. For this study responses to the course cases will be analyzed both in the experimental and control groups. Within case, cross case, and extreme case analysis will be done (Creswell, 1998). Additionally, both groups will have the course discussions analyzed to discover themes.

Course Design

A critical thinking, web-based 250 minute course or a five-hour continuing education offering will be designed. The platform of Web Ct at www.distance-ed.uams.edu is proposed using the following model. Teach critical thinking concepts using a framework in course discussions then apply the framework to solve case studies in an

online link using the *ThinkAbout It* tool. The course has been designed for interest and activity that links many fun opportunities for the nurse to explore critical thinking in an exciting atmosphere and learn as they proceed. The course as designed allows students to access it 24 hours a day and at any time during that day and for several episodes during a two-week period making the time on task very flexible. This will allow working registered nurses the maximum flexibility in signing up for the course. The discussions are very exciting and informative using the web format. Nurses will log on to the course, after an orientation, and proceed to learn to apply critical thinking skills with discussion and with a case study format (see Figure 1 that depicts concepts of critical thinking used in course development).

Course Objectives

The subject after completing the course and using course guidelines will:

1. Learn critical thinking concepts through peer discussion.
2. Write discussions using universal structures of thought.
3. Ask questions of peers using elements of reasoning.
4. Apply intellectual standards when critiquing discussions.
5. Apply elements of the critical thinking framework (2, 3, and 4) to solve case studies, write rationales, and reflect.

Figure 1

Teaching Subjects to Critically Think

<u>Subject Skills</u>	<u>Course Processes</u>	<u>Outcomes</u>
Cognitive Development and Critical Thinking History	Cases + Clinical Reasoning, Problem Solving, and Reflection (concepts) applying a critical thinking framework	= Demonstrated Critical Thinking Skills

Explanation of the ThinkAboutIt tool

ThinkAboutIt tool, <http://207.91.27.188?nwa/spring03-guest/> is an established web-based tool for developing critical thinking. University of Nebraska Center for Instructional Technology Education (NCITE), in cooperation with MetaLogic Inc., and with support from the Andrew Mellon Foundation, has developed a suite of technology tools aimed at promoting deeper student learning in web-based courses and applications. *ThinkAboutIt* has backend capabilities that allow random assignment of students to different versions of the tool and automatized data gathering on student choices, tool feature use, learning resource use, and time spend in learning activities.

The framework for development of the activities first relates self-explanations to developing integrated mental models (e.g., Chi, de Leeuw, Chiu, & LaVancer, 1994; Chi, 2000); the second is a social-cognitive perspective in which learner-learner interactions stimulate metacognitive activities and cognitive restructuring (e.g., Brown & Campione, 1996). The phases of the activities in *ThinkAboutIt* are thus divided into two phases.

The first phase is when *students make a choice + student offers an explanation*. The second phase is when there is *feedback display + peer interaction*. In the first phase, choice + explanation, learners make a choice about how the content should be interpreted or applied and give a rationale for their choice. In the second phase, display + interaction, the tool graphically displays frequencies of all learners' choices and lists all rationales. Learners thus can evaluate their reasoning against that of others and interact in a variety of ways. Content can be presented in *ThinkAboutIt* via any Internet-available format (e.g., text, pictures, video or audio clips, etc.). Two new features are a Coach, who provides hints, and an expert, who gives authoritative feedback (all of the *Thinkaboutit* is set up by an outside university, UAMS will be tapping into this established link).

The course obstacles would be those that are common in web based courses. Students are known to have insufficient or old computer software etc. in their homes and also at times be unable to view the web course or open what is on the course. There are expert technology staff and faculty that can assist in solving these problems.

Method

Participants and Procedure

Registered nurses (120) will be approached on ten-to-twelve medical-surgical units in two-to-three hospitals and asked to volunteer for the critical thinking project. To determine power of .80 ($\alpha = .05$) a sample size 114 is needed (Murphy & Myors, 1998).

Human Subject Consideration

1. Subjects, both male and female and of any age will be asked to volunteer to participate in the critical thinking study. These subjects will total 120 and will be registered nurses. The nurse that volunteers may be working full or part time on medical-surgical patient unit and participate in discharge planning.

a. Gender and Minority Inclusion

The study will be open to all genders and minorities that fit the subject criteria. The criteria are that subjects must be Registered Nurses and work on a medical-surgical inpatient facility using discharge planning. Registered nurses from any nursing program may apply to be a volunteer.

2. The records from the course will be used for both qualitative and quantitative data analysis. The data will be used for aggregate research only and numbered with no names attached.
3. The recruitment of subjects will take place by placing flyers in the chosen hospitals (with permission given by research and or education personnel) on different medical-surgical units giving the nature of the research and when the researcher will make contact. Flyers will also be posted in the cafeteria and break rooms. Visits will be arranged with appropriate hospital personnel to see nurses in person for the study. The subjects will be asked to participate and sign consent forms. Every other subject will be assigned to the experimental group and the opposite to the control group.
4. There are no likely known risks to the subject for taking the course on critical thinking.
5. The confidentiality issues are insured by numbering the discussion, rationales, concept count, and scoring rubric materials, matching the number to the numbered

name on the consent. All materials will be kept in a locked file. The course is opened to subjects and course instructors only and the course data is not shared with anyone. All data is reported as aggregate data only.

6. The benefits to the subject are increased knowledge and a learned framework of critical thinking which can be applied to practice. This organized framework of thinking may help the nurse improve their practice in care settings.

Procedure

After each group of nurses has volunteered to participate I will explain the study, collect the demographics and have the consent form signed and ask for questions. Each form will be coded by number only to protect confidentiality. All documents will be locked in a specified file and only available to the researcher and research team for data entry. Each subject will be randomly assigned to either a control or experimental group. Both groups will receive Continuing Education credit and receive the benefit of taking the critical thinking course.

Materials

Two case studies will be used in the course. Reliability is being established for the cases. The two cases will be entered into the *ThinkAboutIt* format and the same two cases will also be used in the control group. A demographic form will also be used for each subject.

Evaluation

Quantitative

Evaluation will use both quantitative and qualitative measures. The quantitative measures will use a concept count (Sic, et al, 2003; & Gardner, 2003) in each of the two case studies using rationales and the reflections in both the experimental and control groups. The concept count consists of basic nursing elements found in each case study, for example in case one for the young adult medication dose is one of the main issues of the case. How many times in each case was medication dose mentioned both in the rationale and reflection sections? Water retention, another important concept would be counted as well as nutrition. In the second case, the older adult, walking support and safety is considered important as well as medication delivery. These two concepts would be counted if the subject wrote these down in the rationale and or the reflection sections. Only one mention of any one concept is counted for one subject. The raters counted two

examples medication dose (one example would be counted) and one example of water retention and one example of nutrition in one case of the young adult by one subject. This would equal three concepts written for this case.

The second measure will consist of a scoring rubric (Sic, et al, 2003). In this study, the analyses would be whether any or all of the eight elements of the critical thinking framework were applied while solving the case. These framework elements would be searched for in each case in the rationale and reflection sections. The critical thinking framework consists of purpose, question, information, assumption, concept, implication, inference, and point of view. Each set of quantitative measures will be analyzed using t-test comparison between the control and experimental group.

Qualitative

A case study approach will be used when studying the qualitative discussions, rationales, and reflections of all subjects. The qualitative analysis will focus on the themes that emerge in the course discussions during the teaching of critical thinking concepts. Analysis will be done using a qualitative (Nvivo) program to determine themes that emerge as a result of learning the critical thinking framework. In both groups the case study rationales and reflections will be analyzed to determine themes (cross-case, within-case, and extreme case comparisons) between the experimental and control groups (see Table 1 Critical Thinking Analysis).

Table 1

Critical Thinking Analysis of Course Effects

<u>Analysis</u>	<u>Method</u>	<u>Method</u>	<u>Group</u>	<u>Group</u>
Quantitative SPSS	<u>Concept-Count</u> Rationale and reflection in two cases.	<u>Scoring Rubric</u> Rationale and reflection in one case (application of the critical thinking framework).	<u>Experimental</u> Using the course and cases in the <i>ThinkAboutIt</i> tool. Critical thinking framework taught and applied.	<u>Control</u> Using the course and cases in the <i>ThinkAboutIt</i> tool. No critical thinking framework taught.
Qualitative NVivo		<u>Case Study</u> Discussions, rationales and reflections_will be analyzed for themes.	<u>Experimental</u> Discussions and Case study rationales and reflections.	<u>Control</u> Discussions and case study rationales and reflections.

References

- Albanese, M. A., & Mitchell, S. (1993). Problem-based learning: A review of literature on its outcomes and implementation issues. *Academic Medicine*, 68(1), 52-81.
- Allen, M. J. (1995). *Introduction to psychological research*. Itasca, Illinois: F. E. Peacock Publishers Inc.
- Astleitner, H. (2002). Teaching critical thinking online. *Journal of Instructional Psychology*, 29(2), 1-23, online retrieval).
- Atkins, S., & Murphy, K. (1993). Reflection: A review of the literature. *Journal of Advanced Nursing*, 18, 1188-1192.
- Brown, A. L., & Campione, J. C. (1996). *Guided discovery in a community of learners*. In K. McGilly (Ed.). *Classroom lessons: Integrating cognitive theory and classroom practice* (pp. 229-270). Cambridge, MA: MIT Press/Bradford Books.
- Chi, M. T. H., de Leuw, N., Chiu, M., & La Vancher, C. (1995). From things to processes: A theory of conceptual change for learning science concepts. *Learning & Instruction*, 4(1), 27-43.
- Corcoran, S., Aryan, S., Moreland, H. (1988). Critical care education. *Heart & Lung*, 17(5), 463-468.
- Cravener, P. (1999). Faculty experiences with providing online courses thorns among the roses. *Computers in Nursing*, 17(1), 42-47.
- Creswell, J. W. (1994). *Research design qualitative & quantitative approaches*. Thousand Oaks, California: Sage Publications.
- Creswell, J. W. (1998). *Qualitative inquiry and research design*. Thousand Oaks, California: Sage Publications.
- Cuellar, N. (2002). Tips to increase success for teaching online: communication! *CIN Plus*, 5(1), 1, 3-6.
- Dowd, S. B., & Davidhizar, R. (1999). Using case studies to teach clinical problem-solving. *Nurse Educator*, 24(5), 42-46.
- Duffy, T. P. (1998). Clinical problem-solving. *The New England Journal of Medicine*, 328(18), 1333-1336.

- Elder, L., & Paul R. (2003). *Analytic thinking*. The Foundation For Critical Thinking: Dillon Beach, CA.
- Feletti, G., & Engel, C. E. (1980). The modified essay question for testing problem-solving skills. *The Medical Journal of Australia*, 1, 79-80.
- Feletti, G. (1993). Inquiry based and problem based learning: How similar are these approaches to nursing and medical education? *Higher Education Research and Development*, 12(2), 143-156.
- Gardner, E. A. (2003). *Exploration of an online case study model that incorporates critical thinking concepts*. Presentation at the Center for Critical Thinking Conference, Sonoma State University, Santa Rosa, CA: July 15.
- Glen, S. (1995). Developing critical thinking in higher education. *Nurse Education Today*, 15, 170-176.
- Hayes, K., Huckstadt, A., & Gibson, R. (2000). Developing interactive continuing education on the web. *The Journal of Continuing Education in Nursing*, 31(5), 199-205.
- Jarvis, P. (1992). Reflective practice and nursing. *Nurse Education Today*, 12, 174-181.
- Jones, D. (1996). Critical thinking in an online world. www.library.ucsp.edu/untangle/jones.html.
- Kennison, M. M., & Misselwitz, S. (2002). Evaluating reflective writing for appropriateness, fairness, and consistency. *Nursing Education Perspectives*, 23(5), 238-239.
- Leasure, A., Davis, L., & Thievon, S. (2000). Comparison of student outcomes and preferences in a traditional vs. world wide web-based baccalaureate nursing research course. *Journal of Nursing Education*, 39(4), 149-154.
- McCarthy, P., Schuster, P., Zehr, P., & McDougal, D. (1999). Evaluation of critical thinking in a baccalaureate nursing program. *Journal of Nursing Education*, 38(3), 142-144.
- Magnussen, L., Ishida, D., & Itano, J. (2000). The impact of the use of inquiry-based learning as a teaching methodology on the

- development of critical thinking. *Journal of Nursing Education*, 39(8), 360-364.
- Martin, C. (2002). The theory of critical thinking of nursing. *Nursing Education Perspectives*, 23(5), 243-247.
- Miller, M. A. (1992). Outcomes evaluation: Measuring critical thinking. *Journal of Advanced Nursing*, 17, 1401-1407.
- Murphy, K.R., & Myers, B. (1998). *Statistical power analysis*. Mahwah, New Jersey: Lawrence Erlbaum Associates, Publishers.
- Myrick, F. (2002). Preceptorship and critical thinking in nursing education. *Journal of Nursing Education*. 41(4), 154-164.
- Norman, G. R., & Schmidt, H G. (1992). The psychological basis of problem-based learning: A review of the evidence. *Academic Medicine*, 67(9), 557-565.
- Roche, J. P. (2002). A pilot study of teaching clinical decision making with the clinical educator model. *Journal of Nursing Education*, 41(8), 365-367.
- Sic, S. L., Siwatu, K. O., Carlson, D., Horn, C., Bruning, R., & Liu X. (2003) *Linking theory to practice: Using a case-based method of instruction and different discussion formats*. Paper Presentation, Midwestern Educational Research Association, 2003, October, Columbus, OH.
- Tanner, C. A., Padrick, K. P., Westfall, U E., & Putzier, D. J. (1987). Diagnostic reasoning strategies of nurses and nursing students. *Nursing Research*, 36(6), 358-363.

Appendices

- A. Case Studies
- B. Scoring Rubric
- C. Concept Count

Case Study-1

You care for a patient who is 89 years old and who lives at home alone. This patient is a healthy female with the following problems. She is hypertensive, but her blood pressure is under control with medications. There are four other gerontology considerations. The first is chronic back pain upon transfer, difficult walking due to a fractured hip of two years ago, a lumbar laminectomy of five years ago, and bilateral severe bunions.

List the **problems** noted here.

Your challenge is to encourage exercise considering the problems with pain and structure.

- a. Give a pain pill before the client walks
- b. Have the client use a cane or walker with every movement out of her chair
- c. Consider a MD appointment for further surgery

The first intervention followed by a second are listed above.

Justify your answer using clinical terminology.

Use text box for written justification
--

See what the **coach** has to say:

(This link would give students hints)

Considering the pain, age, and difficulty walking two interventions need to be given. This is difficult because of client's choice and availability of assistance in the home.

What have your **peers** said?

What does the **expert** say?

The first is to secure a mild pain medication because of side effects of stronger medications and have these taken regularly. The second is for the client to use whatever walking device is warranted for safety and support.

References:

http://otpt.ups.edu/Gerontological_Resources/Gerontology_Manual/Lunan.html

<http://www.cdc.gov/nccdphp/sgr/olderad.htm>

<http://www.centre4activeliving.ca/Education/OlderAdults/ResourcesOther.html>

The second problem is orientation to time and place. The patient gets mixed up when trying to find things and never seems to know the time or date.

You are concerned about medication delivery and safety in the home. Your intervention is:

- _a. Have family or friends come in and administer the medications.
- _b. Set up the medications in a mediset for the week.
- _c. Place labels on the bottles of all medications.
- _d. Consider a nursing home placement.

Justify your answer using clinical terminology.

Insert written justification.

See what the **coach** says:

The mediset helps organize and remind clients which medications to take and when to take them. These devices can be single strip-boxes with seven days or a full month box. They are usually labeled with the day and can be additionally labeled with either morning, noon, or night.

See what your peers say:

See what the **experts** say:

Further consideration for the nurse is who will fill this box of medication, who will order the medication. Is the client able to do any of these tasks themselves or even take the medications on the day proscribed?

References:

<http://www.beryl.net/HTL/Misc/24303.htm>

<http://ohioline.osu.edu/ss-fact/0127.html>

The next problem is poor vision that is not improved with prescription glasses. You suspect macular degeneration. You realize that the client is not reading anything and has problems with reading the small clock face.

- _a. Get the client a large watch face or big clock.
- _b. Find a large calendar so that the client can see the day.
- _c. Refer to an ophthalmologist.
- _d. Realize that macular degeneration is a fact of aging.

Justify your answer using clinical terminology

Write your justification here.

See what the **coach** has to say.

What are the ramifications of poor vision for the older adult living alone?

What interventions can realistically be implemented?

See what the peers have said:

Expert opinion:

If the client wears the glasses and has a big enough clock face and paper print they may be able to read. Seeing the Ophthalmologist would be a secondary intervention. Macular degeneration is a fact in some aging eyes.

References:

<http://www.macular.org/>

http://www.nei.nih.gov/health/maculardegen/armd_facts.htm

The final problem that the patient has is chronic constipation with poor water intake. This is a life long problem.

Considering the final problem and all mentioned above reflect on what you will do for this client:

Reflection

See what your peers say:

References:

<http://www.emedicine.com/med/topic2833.htm>

<http://health-6.hairmillion.com/link.html>

Case Study-2

A parent called into the pediatric hotline about her daughter who is five years old. Apparently for about ten days, the daughter had been excessively burping. The mother took her daughter to the pediatrician who ordered a flat plate x-ray of the digestive tract. No other treatment except an antacid was given.

List the **problems** you think are apparent to you at this time.

Based on your knowledge of Pediatric clinical examinations, which of the following illustrates the best examination the five year old could have received?

- a. The wait and see approach is what the Pediatrician did and that's fine in this case.
- b. Other tests could have been administered to verify that the child is not suffering from burping disease.
- c. The Pediatrician could have referred the child to a specialist.

Justify your answer using clinical terminology.

Text box for written justification.

See what the **coach** has to say:

The set of symptoms are perplexing you have information about the child's symptoms and information about the Pediatrician's intervention. You need to weigh all of the information you have.

See what your peers say:

See what the **experts** say:

The most appropriate answer, b is most correct as burping is odd and needed other testing. It is tricky to instruct parents to ask for interventions from their doctors.

References:

www.public.bcm.tmc.edu/pa/child-hernia.htm

www.xtramsn.com/health/0%2C%2C8065-1669674%2C00.html

www.niddk.nih.gov/health/urolog/pubs/utichild/utichild.htm

The child was given medication due to the results of her urine sample. Within one day some burping had subsided as well as the abdominal discomfort. The mother called into the hotline asking how to give the daughter her medication as she hated its taste.

You respond by saying:

- a. Hold her down and give the medication; she needs to take it.
- b. Use a liquid to dilute the medication like Root Beer.
- c. Take the medication diluted through a straw.

Justify your answer using clinical terminology.

Text box for written justification.

See what the **coach** has to say:

You know that all of the medication needs to be ingested for the days listed on the prescription. You also know that children react to perceived bad taste. You have a challenge.

What have your peers said?

See what the **experts** say:

Putting medication in another substance can work to make the medication more palatable. The straw idea is good for the five year old, giving them control, and bypassing the taste buds.

References:

<http://www.fda.gov/fdac/reprints/drugdose.html>

www.thecompounder.com/html/flavoring.html

The medication dose has been taken completely and the five year old is back in good health. Some tips that you may give to the mother are:

Reflect on all aspects of this case study and put your thoughts in the box.

Reflection



References:

<http://www.aap.org/policy/ac9830.htm>

http://pediatrics.about.com/library/blurinary_tract_infections.htm

Appendix B Scoring Rubric

Case Study Problem-Rationale-Reflection

Component	Student name:		Grader:	
	Poor 0-1	Satisfactory-Good 2-4	Excellent 5-6	
Identification of significant problems /6	No problem identified. <i>Absent or lack of problem identification.</i>	Problem identification that has likelihood of an intervention by a nurse in practice. <i>Provided some nursing implications for either the learner or patient in a coherent fashion.</i>	Highly appropriate problem identification that has great likelihood of an intervention by a nurse. <i>Discussion is coherent and concise with insightful analysis and synthesis of significant problems.</i>	
Identification of 8 elements of critical thinking in the rationales /6	No appropriate element identified. <i>Absent or incoherent. Superficial list of elements</i>	Elements identified have the beginnings of critical thinking. <i>Present and coherent. Sufficient detail provided</i>	High numbers of elements identified with good evidence of critical thinking <i>Discussion is coherent and concise with insightful analysis and synthesis of significant issues addressing the nursing problem</i>	
Reflection /6	No correct explanation provided of solutions to the case. <i>Missing key nursing implications or otherwise incoherent.</i>	Some description explanation provided of theory-driven solutions to the problem that a nurse would use. <i>Provided some nursing implications for either change or implementation.</i>	Detailed description/explanation provided of nursing theory interventions and solutions. <i>Provision of a highly insightful and coherent analysis of significant and relevant nursing implications</i>	

Comments: _____ Grade /18

1. Identification of the eight elements of critical thinking _____/6
2. Coherent and detailed description and rationale in relation to reflection of nursing interventions. _____/6
3. Identification of relevant nursing problems _____/6

Appendix C
Concept Count

(Apply to rationales and reflections; count each concept only once)

Case-1	Poor	Satisfactory-Good	Excellent	Real Count
Older Adult	0-1	2-4	5-6	
Medication:				
Type				
Time of dose				
Walking:				
Safety				
Support				
Daily Medication:				
Use				
Filling of mediset				
Giving of medication				
Vision:				
Referral				
Case-2	Poor	Satisfactory-Good	Excellent	Real Count
Child	0-1	2-4	5-6	
Teaching:				
Other tests				
Medication:				
Technique				
Teaching				
Parent:				
Concerns				

Total Concept Count for the Cases _____

