

Using a Conceptual Approach with a Concept Map of Psychosis as an Exemplar to Promote Critical Thinking

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ABSTRACT

Teaching students to think critically is an important component of nursing education. A literature review suggests that a conceptual approach and a concept map may help facilitate critical thinking in the nursing student. Currently, there are patients in various health care settings who manifest psychosis and need treatment for the disorder. This article proposes using both a concept map and a conceptual approach to teach the concept of psychosis instead of focusing on content. If students understand the general concept of psychosis, they can identify and implement nursing actions for patients with psychosis regardless of the etiology or health care setting.

Critical thinking is an essential element and outcome of baccalaureate nursing education. Nurse educators are challenged with methods of instruction that prepare graduates to think critically. Faculty can no longer pour facts and figures

into students and then expect them to make critical life-and-death decisions (Wagner & Ash, 1998). Teaching concepts simultaneously with concept maps in nursing coursework can replace teaching methods that foster rote learning and content saturation. This article presents a lesson plan on psychosis that uses both a conceptual approach and a concept map. Several sample test questions are included.

Theoretical Framework

The theoretical frameworks used for this article are based on conceptual thinking and a concept map. Ausubel (1968) stated that the use of concepts can promote a kind of critical thinking. Inclusive in the critical thinking process are five stages of concept identification and development:

- Concept formation.
- Subsumption.
- Progressive differentiation.
- Integrative reconciliation.
- Consolidation.

Novak's (1998) concept map builds on Ausubel's theory of assimilation in that the concept map allows for a structural understanding of a main idea (concept). According to Novak, the concept map should both ask and answer a question. In this article, the question is, What is psychosis?

Literature Review

The use of the concept map reflects the American Philosophical Association's definition of critical thinking—a metacognitive tool that

helps individuals develop a self-appraisal for individual thinking (Daley, Shaw, Balistreri, Glase-napp, & Piacentine, 1999). In a qualitative study, Cannon (1998) found that students perceived concept mapping as a valuable tool. Beitz (1998) agreed and stated that students respond positively to concept maps as a learning tool. Theorists and researchers have found that using teaching strategies that use metacognitive skills and promote meaningful learning are more likely to produce professionals who think critically (Baugh & Mellot, 1998). Using concepts for instruction can improve critical thinking skills (Ausubel, 1968; Daley et al., 1999; Novak, 1998; Perciful & Nester, 1996; Rowles & Brigham, 2005). More specifically, concept maps can stimulate the use of critical thinking skills (Baugh & Mellot, 1998; Beitz, 1998; Daley et al., 1999).

Lesson Plan on Psychosis

Instructors can design lesson plans that use concepts. The following is a lesson plan on psychosis that uses a conceptual approach instead of the traditional nursing curriculum approach that focuses on content. The intent of using this conceptual approach is that if students understand the general concept of psychosis, they can identify and implement nursing actions for patients with psychosis regardless of the etiology or the health care setting. Because patients who manifest symptoms of psychosis are currently seen in health care settings, such as intensive care units, emer-

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TABLE
Lesson Plan on Psychosis

Objectives:

1. Define the concept of psychosis.
2. Identify examples of disease processes and disorders that manifest psychosis.
3. Differentiate between the concept of psychosis and similar concepts, such as delirium and dementia.
4. Relate how the nursing diagnosis of altered thought process can generate other patient problems (nursing diagnosis) (**Figure**).
5. Compare and contrast similarities and differences of subsets of psychosis.
6. Describe nursing interventions and outcomes for the nursing diagnosis of altered thought process.

I. Definition: Delusions or hallucinations as a defining feature (American Psychiatric Association [APA], 1994)

Clinical subsets as defined (APA, 1994); clinical subsets use the progressive differentiation component of Ausubel's (1968) assimilation theory of learning; general to specific (**Figure**)

1. Schizophrenia: undifferentiated, paranoid, disorganized, residual
2. Brief psychotic disorder
3. Schizoaffective disorder
4. Mood-induced psychosis (e.g., major depression, manic episode, mixed episode)
5. Substance-induced psychosis (e.g., alcohol, amphetamines, cannabis, cocaine, hallucinogens, sedatives, hypnotics, anxiolytics, other substances; APA, 1994) (**Figure**)
6. Due to a medical condition (e.g., neurological, such as Huntington's chorea, epilepsy, migraines, problems with subcortical structures or temporal lobe; endocrine, such as hyperthyroidism or hypothyroidism, hyperparathyroidism, hypoadrenocorticism; metabolic, such as hypoxia, hypercarbia, hypoglycemia, fluid or electrolyte imbalances; and hepatic or renal disease)
7. Not otherwise specified (e.g., postpartum psychosis [APA, 1994], intensive-care-unit psychosis) (**Figure**)

II. Risk factors:

- a. Environmental (e.g., intensive-care-unit psychosis)
- b. Personal (e.g., substance-induced psychosis)
- c. Developmental (e.g., postpartum)
- d. Genetic or familial (e.g., bipolar disease, schizophrenia)

III. Mechanisms: neurobiological changes

IV. Related pathophysiological concepts: delirium, dementia, amnesic disorders; identifying these concepts and differential diagnosis uses the integrative reconciliation component of Ausubel's (1968) assimilation theory

- a. Delirium disorders: disturbance of consciousness, decreased ability to sustain focus or shift attention; develops over a short period of time (APA, 1994)
- b. Dementia: characterized by many cognitive defects, including memory. Examples are seen in vascular dementia, dementia of Alzheimer's type (APA, 1994)
- c. Amnesic disorders: memory impairment in the absence of other cognitive impairments (APA, 1994)

V. Manifestation and surveillance: delusions and hallucinations are prominent features of all (APA, 1994) (Figure**)****VI. Clinical management:**

- a. Nursing (**Figure**)
- b. Pharmacologic: psychotropics are sometimes prescribed (e.g., antipsychotics, anxiolytics, mood stabilizers, antidepressants [pharmacologic review])
- c. Behavioral: therapy when indicated; may include individual, family, group; also refer to patient-family support groups

VIII. Review: The idea of review uses the consolidation component of assimilation theory (Ausubel, 1968; Novak, 1998)

gency departments, medical-surgical floors, neurological units, nursing homes, dementia units, rehabilitative centers, psychiatric units, and sub-

stance abuse treatment centers, nurses must be able to assess symptoms and implement interventions when necessary.

Defining Psychosis

Etiological factors related to psychosis include psychotic disorders, such as schizophrenia (undifferentiat-

ed, paranoid, disorganized, residual), brief psychotic disorder, schizoaffective disorder, mood-induced psychosis (major depression, manic, or mixed episodes), and substance-induced psychosis (due to illicit or prescribed medications); psychotic disorders due to a general medical condition, such as Huntington's chorea, epilepsy, migraines, hyperthyroidism and hypothyroidism, hypoxia, hypercarbia, hypoglycemia, fluid and electrolyte imbalances, hepatic and renal disease, and autoimmune diseases; and psychoses not otherwise specified, such as postpartum and intensive care unit. Some psychotic episodes require long-term or lifelong pharmacologic and somatic therapies, whereas others may resolve after medical disorders are treated (American Psychiatric Association [APA], 1994). Regardless, the sometimes frightening nature and debilitating effects of the symptoms (delusions or hallucinations) can be managed.

Clarity of Implementation

The design of a learning experience (lesson plan) involves careful planning. Rowles and Brigham (2005) identified several steps necessary to foster students to both learn and acquire critical thinking skills. These steps include determining specific objectives for the class period, selecting a teaching strategy that promotes critical thinking, implementing the lesson plan, and designing closure and evaluation (Rowles & Brigham, 2005).

Objectives

Critical thinking skills stress problem identification, problem analysis, synthesis, and evaluation. The following are objectives for problem identification in the exemplar lesson plan on psychosis (**Table**):

- Define the concept of psychosis (problem identification).
- Identify examples of disease processes and disorders that manifest psychosis (problem analysis).
- Differentiate between the concept of psychosis and similar concepts, such as dementia or acute confusion (synthesis).

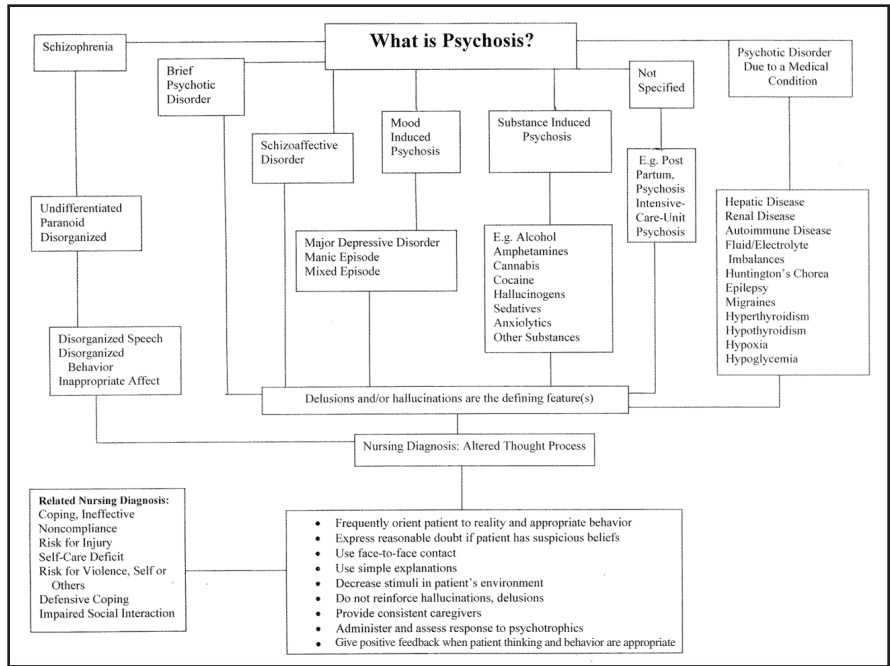


Figure. Exemplar of a concept map about psychosis.

- Relate how the nursing diagnosis of altered thought process can generate other patient problems (evaluation).
- Compare similarities of subsets of psychosis; contrast differences among subsets of psychotic disorders.
- Describe nursing interventions and outcomes for the nursing diagnosis of altered thought process.

Teaching Strategy

A lecture using a conceptual approach to teaching psychosis and a concept map are the primary teaching strategies. Various case studies presented throughout the lecture for discussion that differentiate psychotic episodes are also recommended.

Implementation of the Lesson Plan

Beitz (1998) stated that concept mapping in the classroom can help students identify clustering of risk factors and symptoms. Carrier-Kohlman, Lindsey, and West (2003) identified a specific outline that can be used to guide a comprehensive and critical analysis of concepts. This outline includes definition, prevalence, populations at risk, risk factors, physiological mechanisms and manifestations, related patho-

physiological concepts, and clinical management. The lesson plan shown in the **Table** is conceptually based on both the principles of Ausubel's (1968) assimilation theory and Novak's (1998) concept map and uses the outline of Carreri-Kohman et al. (2003).

Prior to taking this course, prerequisite courses are required (the subsumption component of Ausubel's [1968] assimilation theory). Examples of prerequisite courses include Anatomy and Physiology, Pathophysiology (to interpret the neurobiology of psychosis), Pharmacology (to understand the use of psychotropics in relation to treatment of psychosis), Abnormal Psychology, and Nursing Process. Next, disorders are subclassified below the concept of psychosis into organizers and are presented from general to specific—the progressive differentiation component of assimilation theory (Ausubel, 1968; Novak, 1998). Subsets of the concept of psychosis are included (**Figure**). The course outline becomes more specific as problems (psychiatric disorders, substances, diseases) endemic to each subset are listed (APA, 1994) (**Figure**). This hierarchal depiction is illustrated

in the concept map, and lines create even more meaning by showing a linkage of subconcepts and other relationships (Novak, 1998) (**Figure**). The concepts of dementia, delirium, and amnesic disorders are briefly discussed to differentiate them from the concept of psychosis (the integrative reconciliation component of Ausubel's assimilation theory). The differentiation is clearly supported by the APA (1994) in its definitions (**Figure**). Beitz (1998) suggested that the use of the concept maps can help students to differentiate among similar yet different concepts. Finally, a quick review of course material is conducted at the end of the lecture (referred to as the consolidation phase of Ausubel's [1968] assimilation theory).

Evaluation of Students' Understanding

As stated earlier, student evaluation is an integral part of a lesson plan. The purpose of evaluation is to judge whether the effectiveness of course objectives written at the knowledge and higher level cognitive domains were met. Written tests were chosen as the strategy for evaluating learning outcomes in this context because they serve the purposes of assigning a quantitative number to student performance, evaluating critical thinking, and providing student feedback on performance.

Appropriateness of Evaluation Procedure

The evaluation procedure includes clarification of purpose, choice of strategy, procedure, setting, and effectiveness (Kirkpatrick, DeWitt-Weaver, & Yaeger, 2005). The students will be given a supply-type test in the classroom. Kirkpatrick et al. (2005) supported use of the test as a means to measure knowledge in the cognitive domain. Twigg, Rasmussen, and Speck (2005) identified two categories of test item types. One is the selection type, which generally measures lower level outcomes (comprehension, knowledge, application).

Common selection-type questions are true-false, matching, and multiple choice. The other category is the supply-type, which measures higher level outcomes (synthesis, analysis, evaluation). Common supply-type questions include essay and short-answer questions (Twigg et al., 2005). Supply-type questions have several disadvantages: They are not easy to score, and they do not represent broad sampling (Twigg et al., 2005). Supply-type tests are advantageous in that they are easy to create and measure higher level skills (Twigg et al., 2005). Gronlund (2003) defined higher level outcomes as analyzing, synthesizing, and evaluating. Sample questions (with the correct answers indicated by asterisks) that apply to this specific lesson on psychosis include:

- Knowledge: You are at the hospital caring for a patient with paranoid schizophrenia. What percentage of the population is currently diagnosed with schizophrenia? (a) 1%,* (b) 10%, (c) 0.5%, or (d) 15%.
- Analysis: A 45-year-old woman is admitted to the hospital with a diagnosis of hepatic encephalopathy. She has a history of alcoholism but no known history of any other mental illness. She was admitted approximately 7 days ago. You assess her this morning, and she asks you, "Why are there black spiders crawling on the wall?" This acute psychotic state is probably related to (a) symptoms of alcohol withdrawal, (b) elevated ammonia levels,* (c) a sodium level of 145 mmol/L, or (d) nutritional imbalances.
- Synthesis: Create a short story about a patient in the hospital with acute psychosis. Identify the etiological reason for the psychosis, the signs and symptoms, a primary nursing diagnosis, and nursing interventions. Explain what the patient outcome was and why.
- Evaluation: Write an essay of 400 or fewer words that defines the concept of psychosis. Compare and contrast similarities and differences of four of seven of the following subsets of psychosis (schizophrenia, brief psychotic disorder, schizoaffective

disorder, mood-induced psychosis, substance-induced psychosis, psychosis not specified, psychotic disorder due to a medical condition). What nursing interventions would be appropriate for patients of all subsets?

The test should be administered in the classroom setting. The faculty should consider that more time must be allotted for higher level thinking test questions than for lower level thinking test questions (Twigg et al., 2005).

Conclusion

A lesson plan that uses the theoretical framework of Ausubel's (1968) assimilation theory and Novak's (1998) concept map may facilitate critical thinking skills, such as analysis, interpretation, and evaluation. Currently, students will encounter the concept of psychosis in several health care settings regardless of its etiology. Using a conceptual approach and a concept map of psychosis can help students to internalize a better understanding of this disorder.

References

- American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders* (4th ed). Washington, DC: Author.
- Ausubel, D.P. (1968). *Educational psychology: A cognitive view*. New York: Holt, Rinehart, & Winston.
- Baugh, N.G., & Mellot, K.G. (1998). Clinical concept mapping as a preparation for student nurses' clinical experiences. *Journal of Nursing Education, 37*, 253-256.
- Beitz, J.M. (1998). Concept mapping. Navigating the learning process. *Nurse Educator, 23*(5), 35-41.
- Cannon, C.A. (1998). Path charting: A process and product for linking pathophysiological concepts. *Journal of Nursing Education, 37*, 257-259.
- Carrieri-Kohlman, V., Lindsey, A.M., & West, C.M. (2003). Conceptual approach. In B. Watts (Ed.), *Pathophysiological phenomena in nursing* (3rd ed., pp. 1-10). St. Louis, MO: Saunders.
- Daley, B.J., Shaw, C.R., Balistrieri, T., Glasenapp, K., & Piacentine, L. (1999). Concept maps: A strategy to teach and evaluate critical thinking. *Journal of Nursing Education, 38*, 42-47.

- Gronlund, N.E. (2003). Writing objectives for higher-level thinking skills. In K.M. Davis (Ed.), *Writing instructional objectives for teaching and assessment* (7th ed., pp. 65-73). Upper Saddle River, NJ: Pearson Prentice Hall.
- Kirkpatrick, J.M., DeWitt-Weaver, D., & Yaeger, L. (2005). Strategies for evaluating learning outcomes. In D.M. Billings & J.A. Halstead (Eds.), *Teaching in nursing. A guide for faculty* (2nd ed., pp. 465-467). St. Louis, MO: Elsevier Saunders.
- Novak, J.D. (1998). *Learning, creating, and using knowledge. Concept maps as facilitative tools in schools and corporations*. Mahwah, NJ: Erlbaum.
- Perciful, E.G., & Nester, P.A. (1996). The effect of an innovative clinical teaching method on nursing students' knowledge and critical thinking skills. *Journal of Nursing Education*, 35, 23-28.
- Rowles, C.J., & Brigham, C. (2005). Strategies to promote critical thinking and active learning. In D.M. Billings & J.A. Halstead (Eds.), *Teaching in nursing. A guide for faculty* (2nd ed., pp. 283-303). St. Louis, MO: Elsevier Saunders.
- Twigg, P., Rasmussen, L., & Speck, D.J. (2005). Developing and using classroom tests. In D.M. Billings & J.A. Halstead (Eds.), *Teaching in nursing. A guide for faculty* (2nd ed., pp. 493-506). St. Louis, MO: Elsevier Sanders.
- Wagner, P.S., & Ash, K.L. (1998). Creating the teachable moment. *Journal of Nursing Education*, 37, 278-280.

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