

Preparing Preceptors To Teach Critical Thinking

Why are we here?

- Identify strategies that can help preceptors engage students in critical thinking
- Identify Barriers that make it difficult for preceptors to engage students in critical thinking
- Discuss how we can implement solutions to these problems and specifically how we can use rubrics to help us do this.

No Really, Why are we here?

Why is this important?

- A goal of Higher Education is to increase critical thinking.¹
- NATA tells us that one of the goals of clinical education is to increase critical thinking.^{2,3}
- Educators and employers have recently begun to question the ability of our new graduates to think critically.⁴⁻⁷

What can we do about IT?

First things First: What is Critical Thinking?

- Definitions:
- “reflective and reasonable thinking that is focused on deciding what to believe or do”⁸
- purposeful, self-regulatory judgment which results in interpretation, analysis, evaluation, and inference, as well as explanation of the evidential, conceptual, methodological, criteriological, or conceptual considerations upon which that judgment is based”⁹
- disciplined, self-directed thinking that exemplifies the perfections of thinking appropriate to a particular mode or domain of thought”¹⁰

Critical Thinking Skills

VS

Critical Thinking Disposition

- Critical Thinking Skills are the cognitive processes that are involved in critical thinking
- Critical Thinking Disposition is the attitudes, habits of mind or internal motivations that help us use critical thinking skills.

Critical Thinking Skills

- Reflection
- Evaluation
- Analysis
- Synthesis
- Application
- Interpretation
- Integrating
- Recognize Assumptions

Critical Thinking Dispositions

- Truth seeking
- Open mindedness
- Inquisitiveness
- Maturity of Judgment
- Desire to be well informed
- Fair mindedness
- Willingness to entertain other's viewpoints

Barriers to Teaching Critical Thinking in the Clinical Setting

- Preceptors must be critical thinkers themselves in order to teach critical thinking¹¹
- Preceptors are busy and have little incentive to make the effort to teach critical thinking.¹²
- Preceptors have not had pedagogical instruction and especially in regards to critical thinking^{13,14}
- Preceptors struggle with interpersonal communication¹⁵
- Many preceptors lack experience¹⁶

Barriers

- Preceptors must be critical thinkers themselves in order to teach critical thinking
 - Studies that have suggested that new graduates do not have the adequate critical thinking ability upon graduation⁴⁻⁷
 - Students themselves are conflicted on whether or not they are able to think critically upon graduation¹⁷⁻²⁰

Barriers

- Preceptors are busy and have little incentive to make the effort to teach critical thinking.
 - Henning and Weidner²¹ also demonstrated that graduate assistants experience greater roll strain than other preceptors.
 - We ask preceptors regardless of experience to simply take on more work because it is what we have always done.

Barriers

- Preceptors have not had pedagogical instruction and especially in regards to critical thinking.
 - Research has shown that it is important to be trained in techniques of critical thinking before trying to teach the skill if you are going to be effective.^{22, 23}
 - Research has also shown that most professors in any discipline have little training in general pedagogy or androgogy much less training in teaching critical thinking.^{1, 14}

Barriers

- Preceptors struggle with interpersonal communication.
 - Employers report inexperienced new graduates need to focus more on interpersonal communication skills as this is one of the biggest qualities that new graduates lack.²⁴
 - Swan¹⁵ also reports that the preceptor student relationship hinges on interpersonal communication.

Barriers

- Many preceptors lack experience
 - There is research that indicates a level of incompetence within first year athletic trainers in their roles as preceptors²⁰
 - First year athletic trainers who are preceptors do not recognize as many teaching opportunities and do not provide as good a learning environment as experienced preceptors are able to provide.¹⁶ Not recognizing teaching opportunities and a poor learning environment hinder learning .²²

Improving Preceptors Ability to Teach Critical Thinking

- 1. Training in teaching critical thinking²³
- 2. Mentoring²⁵⁻²⁸
- 3. Training in interpersonal communications^{14,15}
- 4. Use Rubrics to help Preceptors recognize the critical thinking skills that you are trying to emphasize so that they can specifically help the student to perform these skills.²⁹

Training Preceptors to teach Critical Thinking

- Although many athletic trainers will teach in the clinical setting as a preceptor, they typically have not had any instruction in pedagogical practices and must learn on the job.^{1,13, 14}
- Current preceptor training may be inadequate which hinders the preceptors ability to effectively teach²⁰⁻²³
- Abrami et al (2008) found: when instructors were trained in how to teach students to use critical thinking skills they have the greatest influence upon the students ability to think critically.

Techniques Preceptors Can Use to Teach Critical Thinking

- Debriefing
- Reflective journaling
- Case studies
- Modeling
- Higher Order Questioning

Mentoring

- Henning and Weidner demonstrated that first year graduate assistants need significantly more mentoring than more experienced preceptors.²⁵
- If mentoring is provided, preceptors demonstrate an increase in behaviors that promote active learning by students while decreasing behaviors that are detrimental to effective clinical education.^{16,22}

Improve Interpersonal Communication Skills

- Employers report inexperienced new graduates need to focus more on interpersonal communication skills as this is one of the biggest qualities that new graduates lack.²⁴
- Good communication is a necessary skill for the preceptor to provide the positive learning environment necessary for enhancing critical thinking skills .^{15,26}

Using Rubrics to Promote Learning

- Rubrics are seen as scoring tools
- Rubrics divide an assignment into its component parts and objectives and describes in detail what are acceptable and unacceptable levels of performance.

Using Rubrics to Promote Learning

- Rubrics can also help indentify weaknesses and strengths of the student to help further development of critical thinking skills during their educational program.
- Rubrics explain the salient points of emphasis that will be expected for the student.

Using Rubrics to Help Preceptors

- Rubrics explain the salient points of emphasis that a preceptor must observe.
- Rubrics explain the areas in which the preceptor should instruct the student

Using Rubrics to Help Preceptors

- They indentify expectations of the educational content that the student should learn
- They may help the preceptor with their own critical thinking

Creating Rubrics

- Basic Parts of a Rubric:
 - Task Description
 - Scale
 - Dimensions
- Optional (but recommended):
 - Description of dimensions

Case Study Example

	Excellent (6-7 points)	Competent (4-5 points)	Needs Work (0-3 points)
Defines problem	<i>Problem is clearly defined</i>	<i>Problem is partially defined or confusing in its statement</i>	<i>Problem not clearly defined</i>
Asks good questions	<i>Questions are pertinent, evaluative, and/or probing</i>	<i>Mostly process questions, but some systems questions</i>	<i>Process questions only</i>
Selects proper information to solve the problem	<i>Selected only and all necessary information to solve problem.</i>	<i>Selects some necessary information and/or some unnecessary information</i>	<i>Selects information randomly</i>
Formulates good hypothesis	<i>Hypothesis is clearly stated, based on the available information and relevant.</i>	<i>Hypothesis is stated, but only partially fits the available information, is only partially relevant.</i>	<i>Hypothesis absent, confusing, or irrelevant.</i>
Recognizes biases and assumptions	<i>Clearly states biases and assumptions</i>	<i>Biases and assumptions are stated, but unclear</i>	<i>No biases or assumptions noted</i>
Draws valid conclusions	<i>Valid conclusion drawn</i>	<i>Partially valid conclusion drawn</i>	<i>Invalid conclusion drawn</i>
Reflects and/or self corrects	<i>Demonstrates considerable reflection</i>	<i>Demonstrates some reflection</i>	<i>No reflection demonstrated</i>

Disposition Example

	Excelling (9-10 points)	Achieving (7-8 points)	Emerging (5-6 points)	Developing (3-4 points)	Beginner (0-2 points)
Truthseeking	Always seeks many forms and sources of information and identifies bias	Consistently seeks many forms and sources of information and identifies bias	Sometimes seeks multiple forms and sources of information, but is not aware of bias	Occasionally seeks multiple forms and sources of information, but is unaware of bias	Only seeks a one or a few forms and sources of information with little to no care for bias
Openmindedness	Always seeks many possible view points	Consistently seeks many possible view points	Sometimes seeks multiple view points	Occasionally seeks multiple view points	Generally only a single view point
Inquisitiveness	Regularly asks higher order questions	Sometimes asks higher order questions	Occasionally asks higher order questions, but most questions are descriptive	Mostly descriptive questions and rarely asks higher order questions	Rarely asks questions
Analyticity	Identifies appropriate information in order to solve a problem or come to a conclusion or make a fair minded interpretation based on the information	Identifies appropriate information, but conclusions, interpretations are only partially valid	Not all information is appropriate but conclusions or interpretations from the information is valid	Not all information is appropriate leading to invalid or only partially valid conclusions or interpretations	Random information leading to invalid or partially valid conclusions or interpretations

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