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# Lonergan's GEM Model as a Tool to Foster Critical Thinking Skills.

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- Loneragan's ***GEM*** Model as a Tool to Foster Critical Thinking Skills

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# Disclosure Statement

- We have no relevant financial or nonfinancial relationship(s) with the products or services described, reviewed, evaluated or compared in this presentation.
  - We were financially supported by our Universities to present here today.
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# Today's goals

- Introduce Bernard Lonergan's theory of cognition and human understanding – Generalized Empirical Method (GEM)
    - Can be used as a framework to understand how knowledge is gained and
    - How to evaluate whether what is known is “true”
  - Discuss application to graduate education in speech-language pathology
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# Critical thinking skills

- Significant focus in higher education on development of critical thinking skills in students
- Development of critical thinking skills in health professionals can limit bias and serve the needs of our clients or patients in health care

(Perry, 2004)

- Critical thinking in graduate education in SLP:
    - students learn about the science of the profession and
    - apply theoretical frameworks to clinical practice
    - critical thinking infused at every level
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# Focus on EBP

- Consider the wishes, goal and beliefs of the patient
  - Choose evidence-based interventions that are culturally sensitive
  - Draw from clinical experience and knowledge
  - Students often question their own judgment and say “*Just tell me what to do*”
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- As part of best practice, clinicians should not just do
    - What they've been told
    - What they've seen or heard
    - What is new and exciting
  - They should actively *question*
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- The failure to question, to “go with the flow”, and failure to seek insight (understanding) can lead to confusion and failed judgments

(Lonergan, 1992)

- Examples – theories that are widely accepted and later proven false
    - Vaccines cause autism
    - Facilitated communication
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# Bernard Lonergan, S.J.

- A Canadian philosopher
  - Proposed a cognitional theory of mental activities that activate when humans seek to know and understand truth
  - Addressed interiority and self-appropriation
    - Asking questions
    - Exploring processes in our minds
    - A process of reflection on our consciousness of what we know (Cronin, 2001)
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# The GEM Model

- Concerns the development of knowing
- Involves a gradual process of understanding
- Occurs on four conscious levels:
  - Paying attention
  - Getting insights
  - Grasping the truth
  - Action based on the 'truly valuable'

(Streeter, [www.lonergan.concordia.edu](http://www.lonergan.concordia.edu))

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# GEM applied to all aspects of life

- “Thoroughly understand what it is to understand, and not only will you understand the broad lines of all there is to be understood but also you will possess a fixed base, an invariant pattern, opening upon all further developments of understanding”

(Lonergan, 1992)
  - Self-appropriation has implications for:
    - One’s self
    - One’s academic discipline
    - One’s teaching and learning
  - Self- appropriation can be applied to all disciplines
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# A WAY TO THINK ABOUT THINKING

- In Health Science disciplines, we combine:
    - Common sense knowing – what we observe with
    - Scientific knowing – theory, facts
  
  - GEM provides a framework for SLPs to search for truth in their practice while integrating commonsense knowledge and scientific theory
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# The GEM Model

- Introduces students to a model of human understanding – how we come to know what is “true”
- Systematically exposes students to the process of developing understanding and decision-making
- Leads to reflective insight about internal decision-making processes
- Goal – they form “unconditioned” judgments

(Perry, 2004)

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# How we Know or Develop Insights (Knowledge)

- Experience – be attentive -DATA
- Understand - be intelligent – QUESTIONS FOR KNOWLEDGE
- Judgment – be reasonable – QUESTIONS FOR REFLECTION
- Decide – take action based on the truly valuable – QUESTIONS OF VALUE
- At each level we ask questions....

# Example – a case

- Experience
    - 2 year old child – nonverbal
    - Family history of language delay and learning disabilities
    - History of otitis media
    - Premature birth at 34 weeks
    - What testing has been done?
  - Ask questions
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# Ask questions....

- Understand
- Ask more questions
- Child's receptive and expressive language skills are moderately delayed
- Social-emotional development, motor skills, self-help skills are of concern
- Any bias present based on prior experience



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# Begin to make judgments

- Judgments
  - Child and family will benefit from intervention
  - Additional referrals should be made:
    - Audiology
    - Developmental pediatrician
    - Genetic counseling
- Questions
  - Consider treatment options - EBP



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# Truth is emerging about this child

- Decide
    - Team makes decisions about child's diagnosis
    - Child begins treatment
    - SLP provides ongoing support to family
  - Questions will continue throughout the process...
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# How we introduce *GEM* to students:

- Discuss the process of *Insight*
    - the universal process of knowing
    - of development of knowledge and understanding what is true
  - Apply the principles of human knowing to the discipline of speech-language pathology
  - Use case studies to integrate the model as a tool in assessment and intervention planning for persons with communication disorders
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# Implementation in the Classroom

- Describe GEM model and application to all disciplines
  - Present learning activities for students to “think about their own thinking”
  - Describe how they made judgments
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# Thinking about thinking.....

## Solve a puzzle

- While you are doing this, study your thought process
- Let's talk about what that was like.....



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# Solve these jumbles and math problems

- VIPTO
  - HSAA
  - HTIGINS
  - EERNVD
  
  - What's the next number?
    - 5,15,25,.....
    - 7,3,-1,.....
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# Application to SLP

- Case studies were used to explore the ideas of: judgment, bias and knowledge
  - Students were asked to question what they knew as they moved towards developing insight
  - Students wrote reflections on their thought processes as they made judgments related to clinical practice
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# Example – case study

- Students given a case
  - Answered questions about speech, language and communication and any related issues (e.g. motor, attention, social-emotional development, family supports, academic issues, etc.)
  - In parallel, used GEM to inspect their thought processes and what they “know”
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# Classroom assignment...

- Students describe their impressions of the case, using the GEM model as a framework to describe their thought process. Address each of the four levels:
    - Experience
    - Understand
    - Judge
    - Decide
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# GEM continued...

- In their description of what they learned about the case, through observation and interaction, they write about the questions you had at each phase.
  - Example: discuss initial impressions (what was observed); describe questions that arose and how they are answered (through questioning, or through deeper observation).
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# GEM continued....

- Students work through the four levels of the GEM model, ending with the decisions made about the case and also what questions remain.
  - Answered the question
    - What do you not yet know about the case that would be important to learn?
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# Assessment

- Implemented ***GEM*** in three graduate courses in SLP
  - Students were asked a series of questions about their experience with ***GEM***
  - Quantitative and qualitative feedback collected
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# Assessment

Questions	Number	Percentage
Found model to be helpful in exploring own decision-making processes	47/ 61	77%
Will apply the GEM model in clinical work	58/61	95%
Interested in more resources to help apply the model	35/61	57%

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# Qualitative feedback

- Content analysis of comments
  - Themes emerged:
    - Process of asking questions was helpful in making judgments
    - Model assisted students in thinking critically
    - Components were hard to understand
    - More instructional time needed to integrate into decision-making
    - Time consuming for use in clinical practice
    - Helpful to study their own thinking process
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# Sample Quotes

- “It’s a simple concept but complicated to use”
  - “It gave me a good platform for decision-making in all aspects of communication disorders”
  - “Applying the model will help me reach the core of the dilemma, if there is one, and how to go about finding solutions”
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# What are the best features of the GEM model?

- ❑ “Helped me use more critical thinking”
  - ❑ “Helped me think before making decisions”
  - ❑ “Helped me better understand my decision-making process”
  - ❑ “Helps you open your eyes to your clinical and work experience”
  - ❑ “Interesting to truly think about the thinking process”
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# What are the challenges of the model?

- ❑ “There can be endless solutions”
  - ❑ “Decision aspect is most difficult”
  - ❑ “Leaving your bias behind”
  - ❑ “It can be hard to understand”
  - ❑ “Takes a lot of time”
  - ❑ “Hard to apply”
  - ❑ “Need more examples to really understand”
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# Conclusions

- Students find model to be helpful to apply in clinical decision-making scenarios
  - Application of model is challenging and time-consuming
  - Thinking about thinking – metacognition – was a new concept for most students
  - Talking about thinking was somewhat familiar – e.g., prior experience with ethical decision-making model, but not widely applied
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# Limitations

- May work well in a problem-based learning environment – hard to implement in just one course
  - Difficult to spend the time needed to dive deep into metacognition
  - Easier to implement in smaller classes
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# Plan

- Use more case studies throughout semester
  - Build alternate scenarios into cases
  - Introduce readings about the model from other disciplines
  - Introduce pre- and post-critical thinking measures
  - Explore strategies on how to implement across the curriculum
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