Improving Effective Interdisciplinary Team Work Using Team-Based Learning within the NH-ME LEND Curriculum: Comparing Years 1 – 3

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Core Elements of Team–Based Learning

"A special form of collaborative learning using a special sequence of individual work, group work, and immediate feedback to create a motivational framework in which students increasingly hold each other accountable for coming to class prepared and contributing to the discussion."
– Michael Sweet (n.d.)

- Review of Goals and Expectations
- Forming Permanent Teams of 5-7 Members (With Members from Multiple Disciplines)
- Learning Content Through Preparation Outside of Class
  - Readings
  - Lecture Capture
  - Website Reviews
- Accountability – Readiness Assurance Process
  - Individual Readiness Assurance Test
  - Team Readiness Assurance Test
- Frequent and Timely Feedback including Peer Evaluation
- In-Class Activities
  - Small amount of time clarifying concepts from readings
  - Case-based Applications (Significant Problem, Specific Decision)
  - Integrative Assignment

Background

NH-ME LEND adopted Team-Based Learning beginning in Fall 2014 to:

- Use a consistent instructional methodology and coordinate instruction across content modules among all faculty,
- Actively engage a diverse group of learners,
- Strengthen trainees' mastery of content, critical thinking skills, and interdisciplinary team work, and
- Maximize face-to-face time and the use of technology.

UNH and UMaine LEND trainees and faculty engage in Team-Based Learning in weekly seminars via video conferencing using Zoom technology.

Challenges to Implementing Team–Based Learning in NH-ME LEND

- TBL considered ideal in situations with high student to faculty ratio. (Fatima, et al, 2013; Clark, Nguyen; Mennenga, 2013). The NH-ME LEND has a very high teacher to student ratio.
- It can be difficult to get "buy-in" by all faculty when the number of faculty is large (Allen et al., 2013).
- It can be difficult to create assignments that challenge all team members of diverse teams, support active participation by all team members, while integrating content from all faculty.
- Distant campuses can be an "inhibiting factor" for effective team based learning (Copeland et al., 2013).
- Research suggests that TBL is implemented most effectively on a single campus. Maine and New Hampshire connect through Zoom technology.
- Maine constitutes a team in itself – making it impossible to assign Maine trainees to teams deliberately and systematically.
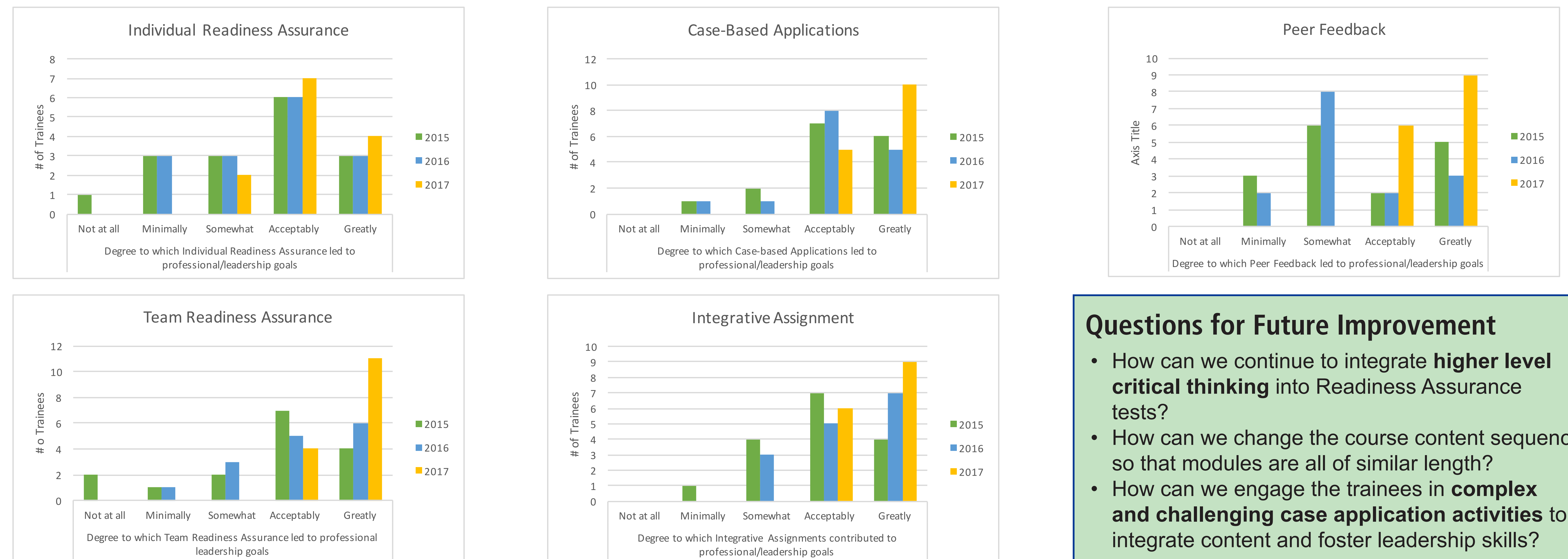
Improvements Based on Years 1 – 3 Evaluations

- Expanded strategies to **engage a large faculty** in TBL methodology.
- Defined **clear learning outcomes** for each content module.
- Identified "table of contents" readings and developed reading guides based on the learning outcomes to balance **quality** vs. **quantity** of preparation materials.
- Developed faculty skills in writing readiness assurance **test questions** using Bloom's Taxonomy to improve the assessment process and to ensure focus on content discussions.
- Developed faculty comfort and skill to focus on key concepts during "**mini-lectures**" to support **case application activities**.
- Added instruction on providing **peer feedback**.
- **Explained TBL to trainees** during the recruitment process so that they were aware of expectations prior to the start of the first semester.
- **Improved technology** used in connecting two sites during class.
- Kept trainees in **same teams for entire year** instead of changing at end of 1st semester.

LEND trainees share their discussions based on case-based application activities.

Comparison of Trainees' Program Evaluation from Year 1 (2015) to Year 3 (2017)

Individual Readiness Assurance
# of Trainees vs. Degree to which Individual Readiness Assurance led to professional/leadership goals (Not at all, Minimally, Somewhat, Acceptably, Greatly) — 2015, 2016, 2017

Case-Based Applications
# of Trainees vs. Degree to which Case-based Applications led to professional/leadership goals (Not at all, Minimally, Somewhat, Acceptably, Greatly) — 2015, 2016, 2017

Peer Feedback
Axis Title vs. Degree to which Peer Feedback led to professional/leadership goals (Not at all, Minimally, Somewhat, Acceptably, Greatly) — 2015, 2016, 2017

Team Readiness Assurance
o Trainees vs. Degree to which Team Readiness Assurance led to professional leadership goals (Not at all, Minimally, Somewhat, Acceptably, Greatly) — 2015, 2016, 2017

Integrative Assignment
# of Trainees vs. Degree to which Integrative Assignments contributed to professional/leadership goals (Not at all, Minimally, Somewhat, Acceptably, Greatly) — 2015, 2016, 2017

Questions for Future Improvement

- How can we continue to integrate **higher level critical thinking** into Readiness Assurance tests?
- How can we change the course content sequence so that modules are all of similar length?
- How can we engage the trainees in **complex and challenging case application activities** to integrate content and foster leadership skills?

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