

# Enhanced technology for Team-based learning (“TBL”):

## Impact of enhanced TBL software

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### INTRODUCTION

- The author, also a faculty member at Embry-Riddle Aeronautical University, began teaching with paper-based team-based learning (“TBL”) and was impressed with its efficacy. However, the TBL administrative process was overwhelming. To overcome this challenge the presenter started with an existing TBL software platform developed at Duke-NUS Medical School and completely rebuilt a newly redesigned “second generation” TBL software application ([www.InteDashboard.com](http://www.InteDashboard.com)). The TBL software application provided functionality to implement, individual and team readiness assurance test, application exercises and peer evaluation.
- The author then conducted an 18-month beta test with 20 participating institutions. Results of the beta testing were presented as a poster at the 2017 TBLC conference. Beta testing faculty were surveyed about their experience with the [www.intedashboard.com](http://www.intedashboard.com) TBL software which reported: 75% of faculty would recommend the TBL software; 81% felt real-time data increased learning outcomes and 54% reported that technology save administrative time; 36% identified concerns about academic integrity; 18% identified concerns about usage difficulties.
- The author then incorporated the feedback from the beta test to enhance the TBL software. Results and evaluation were conducted among the users on the enhanced version.

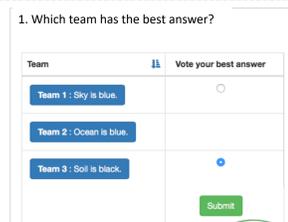
### Previous Features

- [www.InteDashboard.com](http://www.InteDashboard.com) is a one-stop solution for TBL, which offers full TBL features on a digital platform.
- Pre-work • IRAT • TRAT • Clarification • Applications (4S)
  - Peer Evaluation

### Enhanced Features

- Enhanced speed and capacity
- New features

#### eGallery Walk



#### LMS Integration



#### Question Export



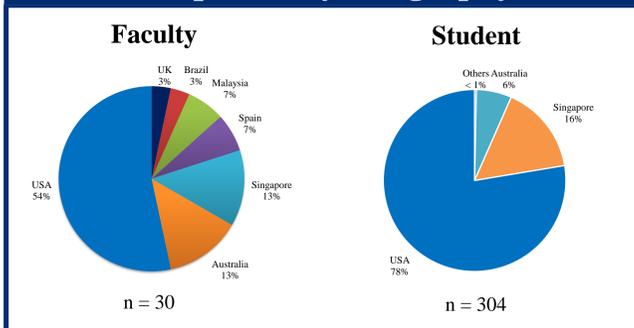
### METHOD

- Faculty and students from 23 institutions using [www.intedashboard.com](http://www.intedashboard.com) for TBL were approached to participate in the survey. This was the first time students had been surveyed.
- The survey was shortened from last year to four items.
- The scale was changed from a five-point scale last year to an 11-point scale (0 to 10) to allow for comparison to other user feedback benchmarks used in the software industry.
- There were faculty respondents from five continents: North America (53%), Asia (20%), Australia (13%), Europe (10%), South America (3%).
- There were student respondents from four continents: North America (78%), Asia (16%), Australia (6%), Europe (< 1%).

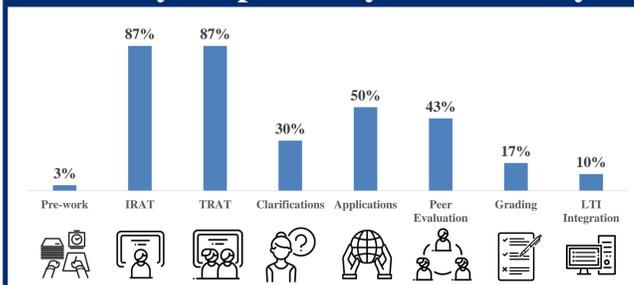
### Faculty and Student Survey



### Responses by Geography



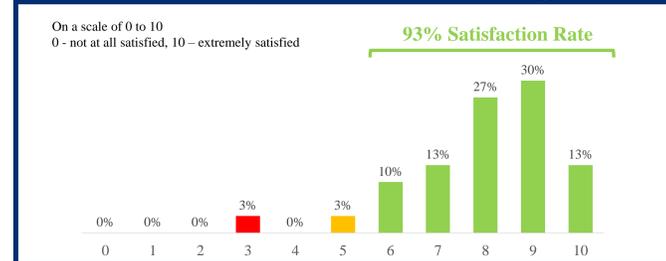
### Faculty Responses by Functionality



### RESULTS

- 15% of faculty and 7% of students users completed the survey.
- 93% faculty and 70% student satisfaction rate (rating 6 and above).
- 87% faculty recommendation rate and net promoter score (“NPS”) of 30.
- Biggest benefits reported by faculty and students:
  1. Real-time feedback, results collection, monitoring and analysis
  2. Has made TBL easier to implement: reduced manual work in grading and conducting peer evaluation
  3. One-stop online solution for TBL
- Biggest concerns reported by faculty and students:
  1. More peer evaluation types
  2. Features to support online remote TBL learning
  3. Infographics of student performance

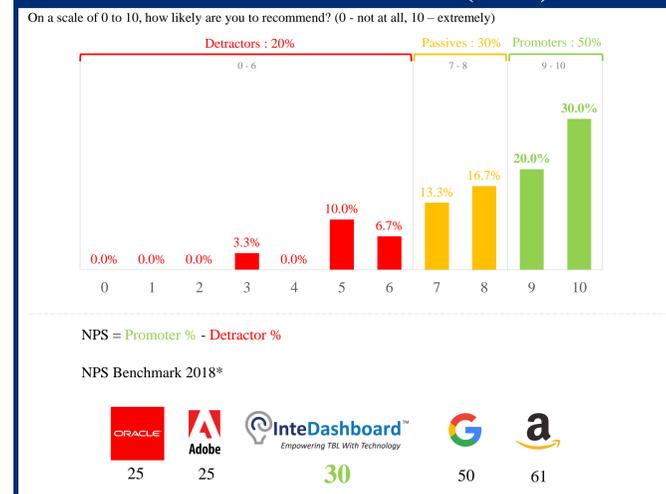
### Faculty Satisfaction Rating



### Student Satisfaction Rating



### Net Promoter Score (NPS)



### DISCUSSION

- Overall, the teacher recommendation rate was higher this year versus last year (87% versus 75%). However, this should be interpreted with caution as the scale was different last year and it is not clear that all of the respondents utilized all of the enhanced features.
- Not surprisingly, the overall satisfaction rates of faculty and students were different (93% for faculty versus 70% for students) as students did not interact with the tool as extensively as faculty.
- Qualitatively, as expected there were real-time data and administrative time saving benefits. However, concerns about academic integrity were prominent in the previous survey, but not reported by faculty this year who instead identified the need for additional peer evaluation formats and features for online learning.
- The beta testing faculty and survey respondents could be considered “early adopters” and hence more receptive to TBL software than the general population so it may not be appropriate to generalize beyond this group.

### CONCLUSION

- Given some of the constraints identified above, it may be difficult to reach definitive conclusions. Instead it may be more appropriate to view this as a starting point for more refined analysis in the future.

### ACKNOWLEDGEMENTS

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|--|--|
| <ul style="list-style-type: none"> <li>• North America</li> <li>• Augusta University</li> <li>• Boise State University</li> <li>• Columbus State University</li> <li>• Ithaca College</li> <li>• Southern Virginia University</li> <li>• University of Hawaii</li> <li>• University of Illinois at Chicago</li> <li>• University of South Alabama</li> </ul> | <ul style="list-style-type: none"> <li>• Asia</li> <li>• Duke-NUS Medical School</li> <li>• Manipal International University</li> <li>• Singapore Institute of Technology</li> </ul> |
| <ul style="list-style-type: none"> <li>• South America</li> <li>• Universidade Federal do Maranhão</li> </ul>  | <ul style="list-style-type: none"> <li>• Australia</li> <li>• Deakin University</li> <li>• Macquarie University</li> </ul>   |
|  | <ul style="list-style-type: none"> <li>• Europe</li> <li>• IE Business School</li> <li>• University of Sussex</li> </ul>   |



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The Author is the Commercial Founder of and has a financial interest in CognaLearn. CognaLearn is the company that developed InteDashboard™ [www.intedashboard.com](http://www.intedashboard.com), which is TBL software developed in collaboration with Duke-US Medical School; InteDashboard™ is one of the technology tools described in this poster.

### AUTHOR



Brian O’Dwyer is a Team-based learning (“TBL”) educator, enthusiast and entrepreneur. He teaches Aeronautical Science for Management, Airline Management and Airport Administration & Finance at Embry-Riddle Aeronautical University in Singapore. He has presented at 28 conferences and workshops on TBL and education technology in Asia, Australia, Latin America and the United States. He worked with a team from Duke-NUS Medical School (“Duke-NUS”) to create [www.intedashboard.com](http://www.intedashboard.com) specifically for TBL. Previously, he was an Entrepreneur-in-Residence, Learning Technologies at Duke-NUS, CFO of ASX/LSE listed Skywest Airlines, a Credit Suisse investment banker and an A.T. Kearney management consultant. He has a BS from Columbia and an MBA from Duke. Email: [odwyerb@erau.edu](mailto:odwyerb@erau.edu).