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Abstract

This paper reports the relationship between student grit, defined as the specific characteristic of perseverance and passion for long-term goals, and perceptions of team-based learning (TBL). In a cohort of first-semester, master's level occupational therapy students (N=29), no statistically significant relationship between grit and positive perceptions of TBL was identified in this retrospective study. Findings suggest that students' grit levels are not predictive of positive or negative TBL perceptions. For OT faculty wishing to teach using a less-structured "flipped" classroom environment such as TBL, this study suggests that high-performing students may have positive perceptions.

Keywords

Team-based learning, grit, occupational therapy, education, learning styles

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ABSTRACT

This paper reports the relationship between student grit, defined as the specific characteristic of perseverance and passion for long-term goals, and perceptions of team-based learning (TBL). In a cohort of first-semester, master's level occupational therapy students (N=29), no statistically significant relationship between grit and positive perceptions of TBL was identified in this retrospective study. Findings suggest that students' grit levels are not predictive of positive or negative TBL perceptions. For OT faculty wishing to teach using a less-structured "flipped" classroom environment such as TBL, this study suggests that high-performing students may have positive perceptions.

INTRODUCTION

Over four decades have passed since Larry Michaelsen began developing a teaching method based on assigned readings, individual and team tests and team discussions about applied scenarios (Michaelsen, Knight, & Fink, 2002). This method, called team-based learning (TBL), offers a unique learning environment in which students are given opportunities to construct knowledge through multiple testing and open discussion venues (Silbley & Ostafichuk, 2014). For some, TBL offers a departure from traditional "chalk and talk" or "sage on the stage" lectures and note-taking scenarios, but for others, TBL is a quagmire of endless discussion on possibilities and probabilities rather than direct answers to tangible problems. However, when asked, students generally report satisfaction with TBL and studies show TBL is an effective teaching strategy (Koles, Stolfi, Borges, Nelson, & Parmelee, 2010; Mennenga, 2013; Warriar, Schiller, Frei, Haftel, & Christner, 2013; Zgheib, Simaan, & Sabra, 2010). Questions remain about what characteristics predict students' affinity for TBL versus traditional lecture-based teaching methods.

While many characteristics may contribute to students' perceptions of TBL, of specific interest is the personality characteristic of grit, defined as perseverance and passion for attaining long-term goals (Duckworth, Peterson, Matthews, & Kelly, 2007). Students

with high levels of grit are theorized to be goal-directed, preferring courses where learning is very linear and stepped. For example, a high-level grit student may prefer and have better outcomes in a hard-science course where teaching and learning may be based on a repeating cycle of lecture, memorization and testing. Conversely, it is theorized that students with high levels of grit might not prefer the sometimes nebulous paths of TBL learning. If these theories are correct, it is expected that gritty students view TBL unfavorably because the TBL process is not linear or stepped and may appear somewhat arbitrary. While gritty students will no doubt succeed at TBL because success is a hallmark outcome of these students, it is expected that students with high levels of grit will have decidedly lower perceptions of TBL compared to those students who are not gritty. Therefore, the purpose of this retrospective research study is to examine relationships between student perceptions of TBL, as measured by the Team-Based Learning Student Assessment Inventory (TBL-SAI), and Grit Scale data in a convenience sample of first semester, master's level occupational therapy students.

LITERATURE REVIEW

Team-Based Learning

Team-based learning (TBL) is a teaching and learning method established nearly forty years ago by Larry Michaelsen at the University of Oklahoma (Michaelsen et al., 2002). Initially developed for Michaelsen's personal use, TBL is now used around the globe in a wide variety of educational settings and by many disciplines. From high schools to medical schools, TBL is successfully implemented by an ever-expanding group of educators with a growing amount of evidence supporting TBL as a student-preferred learning method with positive academic outcomes.

TBL is a systematic and structured approach based on student application of learning principles rather than rote memorization of information (Silbley & Ostafichuk, 2014). Four key principles of TBL include: (a) proper forming and management of teams, (b) student accountability, (c) team assignments promoting learning and team cohesiveness, and (d) timely and frequent feedback from the instructor (Michaelsen & Sweet, 2011). Principles of accountability and team assignments are achieved through a repeating cycle of assigned readings, individual testing, team testing and team application exercises.

The first principle, proper forming and management of teams, is met by forming instructor-selected teams based on specific criteria that the instructor establishes prior to the first class period. These criteria are unique to each class, with the goal of distributing student strengths and weakness among teams. For example, in an entry-level occupational therapy course, a criteria may be students who are occupational therapy assistants. Generally, an occupational therapy assistant offers significant benefits in understanding and applying reading material, so it is advantageous to equally distribute people meeting this criteria across teams. As another example, in a cohort with a relatively small number of males versus females, being a male becomes a criteria for equal distribution across teams. Again, the goal is identifying criteria which may have significant impact on team cohesion and learning and distributing people

meeting the criteria across teams. To ensure transparency and reduce possible conflict, students are made aware of the selection criteria.

An additional and important note about teams is that they are enduring. Teams typically remain for the duration of a course and may even persist through multiple TBL courses across different semesters. Keeping teams together for extended periods builds team cohesion and promotes individual accountability.

The second principle, student accountability, is enforced at both individual and team levels. A significant part of TBL success is based on student preparedness for in-class work. Typically, this requires students to complete out-of-class reading assignments related to upcoming in-class tests and application exercises. Students are held accountable for out-of-class reading through a testing process called readiness assurance tests (RATs). RATs consist of two types, individual readiness assurance test (IRAT) and team readiness assurance test (TRAT). For a given reading assignment, the IRAT and TRAT are the same test, but with substantially different administration procedures.

Given at the start of class, IRATs are timed, short (5-10 questions) multiple-choice tests covering previously assigned readings. Questions are written to cover broad principles and topics and not to test detailed knowledge. The goal of IRATs is holding students accountable for assigned reading and assessing student readiness for upcoming team application exercises. An important criteria of IRATs is that students are not given their test scores and enter the next step unaware of how well they actually performed on the IRAT.

Immediately after all students complete the IRAT, students gather into assigned teams and as a team, take the timed TRAT. Even though the TRAT and previously administered IRAT are the same test, there are significant differences. First, on a TRAT, students utilize the combined knowledge of their team members to complete the test, and second, teams are allowed to see their grade upon test submission. During the TRAT, team members openly talk among themselves about questions and answer choices. This discussion is an important learning process for students. Eventually, the team must decide on one correct choice for each question as only one member per team is permitted to submit answers. The TRAT reinforces the accountability principle as all team members receive the same grade for the submitted TRAT.

The third principle, learning and team cohesiveness, is enforced with team application exercises. Application exercises consist of written scenarios where students must select the best answer from among several possible choices. The caveat is that all answers have some degree of correctness. Scenarios are written to require application of recently learned information to real-world scenarios, requiring students to choose and defend what they consider to be the best answer. This process demands team members' interaction as they struggle to apply and defend their answer to other team members and to arrive at a team consensus. Eventually, one member from each team is required to come before the class to identify and defend the team's choice.

The fourth principle, timely and specific instructor feedback, is critical to TBL success. Instructor feedback is delivered at multiple points along the TBL path and is given as individual, team, or class feedback. While students are given opportunity to experiment with alternative ideas and concepts, instructor feedback is given to ensure students do not venture too far from the correct path. Additionally, students' investigation and rejection of incorrect answers is equally as important as determining correct answers. Appropriately timed instructor feedback ensures students understand why answers are or are not correct.

Positive Impacts of TBL

The impact of TBL on test outcomes is well-studied from several perspectives and across multiple disciplines. In a study of 311 third-year medical students in a pediatric clerkship at the University of Michigan Medical School receiving TBL instruction, when compared to students previously instructed without TBL, TBL students showed a statistically significant improvement of 3.04 points ($p < .0001$) on the National Board of Medical Examiners pediatric shelf exam (Warrier et al., 2013). One hundred and forty nine students of the same cohort also showed a statistically significant improvement of 2.53 points ($p = .0109$) on the Comprehensive Clinical Assessment (Warrier et al., 2013). In another study in Lebanon at the American University of Beirut, a group of 78 second-year medical students receiving modified TBL instruction showed a 28 point improvement in mean scores on a pharmacology summative quiz, when compared to previous scores of students receiving no TBL instruction (Zgheib et al., 2010).

The impact of TBL is also reported across personal domains such as teacher enjoyment and reduced work load following initial TBL module development, and perhaps most importantly, increased interaction between faculty and students (Michaelsen & Sweet, 2008). For students, positive impacts of TBL is purported to range from increased interpersonal communication to increased comprehension and recall of information (Mennenga & Smyer, 2010). While TBL is not a panacea for learning and the methodology does not fit all teachers or learners, when coupled with the previously discussed impact of TBL on testing, the overall potential of TBL to transform the classroom from teacher-centered to learner-centered is supported in the literature.

TBL Data Analysis Limitation

Despite the many reported successes of TBL in both positive student feedback and performance on written examinations, there is a significant limitation of how student feedback and data has been gathered. Student feedback on TBL has typically been gathered using locally created questionnaires with little or no validity or reliability studies (Mennenga, 2012). The lack of a standardized TBL instrument made it difficult to clearly identify the full scope of student responses and compare responses across different cohorts. In 2012, Mennenga published the first standardized instrument to measure students' perception of TBL, the Team-Based Learning – Student Assessment Instrument (TBL-SAI).

TBL-SAI

Mennenga began the TBL-SAI standardization process in 2009 with 396 undergraduate nursing students at a southwestern university in the United States. TBL-SAI development was done in three phases using a panel of four TBL experts to develop the initial 45 question instrument. Using four content experts, testing showed the TBL-SAI to be both valid and reliable for measuring student accountability, preference for lecture or TBL, and student satisfaction. Psychometric analysis of the final 33 question instrument obtained an overall Cronbach α of .941, .782, .893 and .942 for accountability, preference for lecture or TBL, student satisfaction subscales, and total score, respectively (Mennenga, 2012).

The TBL-SAI was also used in a study conducted at the University of North Florida's physical therapy program's gross anatomy class (Livingston, Lundy, & Harrington, 2014). Students showed positive outcomes in accountability (19%-22% above neutral), preference for lecture or TBL (13%-24% above neutral) and student satisfaction (4%-9% above neutral). While the data showed positive outcomes for this group of physical therapy students, no TBL-SAI data on occupational therapy students is reported in the literature.

In conclusion, TBL is a well-established teaching methodology that has been studied from several perspectives. The process of TBL includes out-of-class reading assignments, followed by individual and team tests, culminating with team application exercises. This process is at times less structured than traditional lecture-based classes and students may perceive the process as "messy."

Learning Styles

Many student learning characteristics and their relationships to student success are studied and documented. Much data has been collected on characteristics such as IQ, as well as personality traits and learning styles as they relate to student outcomes, with IQ possibly being the most heavily studied and weighted (Sternberg, Grigorenko, & Bundy, 2001). Even though IQ and its relationship to student success is well established, other student success measures can be considered. Less studied, but perhaps equally important, are personality traits. In a study of 308 undergraduate college students completing the Five Factor Inventory and the Inventory of Learning Process as well as providing GPA information, a hierarchical regression analysis found that five personality traits accounted for 14% of grade variance (Komarraju, Karau, Schmeck, & Avdic, 2011).

In addition to IQ and personality, student learning styles are shown to impact learning and outcomes. Using the Kolb Learning Style Inventory to assess preferred learning styles of eight occupational therapy students failing first semester neuroanatomy content at Louisiana State University Health Sciences Center-Shreveport, researchers developed individual learning plans that improved all students' scores to above passing (Murray, 2011). While, academic outcomes related to IQ, and learning styles are well studied, very little is known about other more internal characteristics such as perseverance or grit (Duckworth & Quinn, 2009).

The Grit Scale

Grit, a personality characteristic defined as perseverance and passion for attaining long-term goals, was first published in 2007 (Duckworth et al.). Development of the Grit Scale started in 2004 when researchers carried out six successive studies among 2,251 diverse adult populations, 139 university undergraduate students, 1,218 freshman cadets at the United States Military Academy, West Point and 175 finalists in the 2005 Scripps National Spelling Bee competition (Duckworth et al., 2007). Each study examined and reported that “individual differences in grit accounted for significant incremental variance in success outcomes over and beyond that explained by IQ...” (Duckworth et al., 2007, p.1098). Grit also contributed more to measured success than the Big Five personality traits (Komarraju, Karau, Schmeck, & Avdic, 2011). Over the six studies, percent of variance attributed to grit ranged from a low of 1.4% for West Point cadet retention to a high of 6.3% for undergraduate GPA. The study authors concluded that grit, perseverance and passion for attaining long-term goals, is a better predictor of success than IQ or personality and shows promise for being a good predictor of student success.

While literature supports both TBL as a learning and teaching method and grit as a measurement of success, there is no literature examining relationships between grit and students’ perceptions of TBL. Because gritty individuals demonstrate success in achieving arduous goals, which frequently have clear guidelines and direct solutions to problems, it is plausible that gritty individuals will struggle with the sinuous learning paths and solutions often associated with TBL. This paper reports a study bringing together the previously unlinked pieces of TBL and student grit as measured in 29 first-semester masters of occupational therapy students at a private Christian university in Florida.

METHOD

Participants

Participants (24 women, 5 men) were recruited from a convenience sample of first-semester master in occupational therapy students enrolled in a 3-credit, 12-week didactic course on human occupation. Thirty students were enrolled in the class, however, only 29 were present when the TBL-SAI was administered. The average age of participants was 25, ranging from a low of 22 to a high of 37 years of age

Students in the course were required to take bi-weekly IRATs and TRATs followed by a brief lecture. On weeks that readiness tests were not administered, students participated in application exercises relating to the previous week’s reading and tests. The process of alternating readiness tests and application exercises was followed for the semester’s majority. The TBL-SAI was administered at the beginning of a class period during the last week of the course.

Instruments

The TBL-SAI consists of 33-questions, comprised of three subscale scores and a total score. The majority of questions are scored from 1 – 5 for “strongly disagree” to

“strongly agree”. Question numbers 4, 11, 13, 14, 16, 18, 21, 22, 28 & 30 are worded in the negative and are reverse-scored so that “strongly disagree” receives a score of 5 and “strongly agree” receives a 1.

The TBL-SAI accountability subscale has eight questions with a score range from 8-40 and assesses student perception of preparation for class and contribution to their team. The preference for lecture or TBL subscale has 16 questions with a score range of 16-80 and assesses student ability to recall material and attention level during lecture versus TBL. The satisfaction subscale has nine questions with a score range of 9-45 and assesses students’ overall satisfaction with TBL.

Mennenga (2012) established neutral scores for each of the three subscales and the total score. The neutral score is the score where respondents show no preference for TBL versus traditional lecture. Scores above neutral indicate increasing preference for TBL versus lecture. The neutral scores for the three subscales, (a) accountability, (b) preference for lecture or TBL and (c) student satisfaction are 24, 48, and 27 respectively. A total score of 99 represents a neutral score for overall preference for TBL versus lecture.

The Grit Scale consists of 12 self-answered questions ranked on a Likert-like scale of “Very much like me” to “Not like me at all”. For questions, 1, 4, 6, 9, 10 & 12, responses range from “Very much not like me” receiving a score of 5 and responses “Not like me at all” receiving a score of 1. Questions 2, 3, 5, 7, 8 and 11 responses are reversed scored and range from “Very much like me” receiving a score of 1 to “Not like me at all” receiving a score of 5. Individual grit scores are added and the total score divided by 12. A maximum score of 5 represents an extremely gritty person and the lowest score of 1 represents a person who is not at all gritty.

Procedure

The two assessments used in this research study, the TBL-SAI and the Grit Scale, were administered to the same cohort of occupational therapy students but by different people and at different times. The assessments were given without intention that the data would later be used for this research study.

TBL-SAI

With permission from the TBL-SAI author (personal communication, November 10, 2014), the TBL-SAI assessment was converted from pen and ink to online format using Qualtrics.com (Qualtrics, 2015) and administered in a classroom setting towards the end of the semester of a course on human occupation taught using TBL processes and procedures. One student was absent during the day the TBL-SAI was administered.

Students were given a link to access the instrument and allowed class time to participate in the assessment. TBL-SAI responses were manually entered into an Excel spreadsheet formulated to convert the entered text into scored responses using Mennenga’s scoring algorithm. The spreadsheet also calculated students’ subscale and total scores as well as standard deviations for each subscale and the total score.

Grit Scale

Earlier in the semester and as part of a separate course taught by an occupational therapy department colleague, the same cohort of OT students were administered the Grit Scale. This course was taught using traditional methods of lecture, assignments, presentations and written tests and with no form of TBL utilized as part of this course. Grit data was collected on pen and paper and stored in a secure location by the colleague. This data was later entered into the same Excel spreadsheet used for TBL-SAI data and converted from raw scores for data analysis.

RESULTS

TBL-SAI Data

The 29 TBL-SAI subscales and total scores showed mean and standard deviation scores as follows: accountability subscale = 35.34, 1.93, preference for lecture or TBL subscale = 57.34, 6.32, satisfaction subscale = 38.69, 4.53, and total score = 131.38, 10.12. See Table 1 for further breakdown of scores by gender.

Table 1

TBL-SAI Subscale and Total Scores

<u>Subscale</u>	<u>All (n=29)</u>		<u>Male (n=5)</u>		<u>Female (n=24)</u>	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
Accountability	35.34	1.93	35.6	1.85	35.29	1.95
Preference	57.34	6.32	57.6	5.61	57.3	6.46
Satisfaction	38.69	4.53	39.2	4.17	38.6	4.6
Total Score	131.38	10.12	132.4	9.89	131.7	10.16

Grit Data

Grit data was originally collected on 30 students, however, the data for the one student who did not take the TBL-SAI was eliminated, leaving 29 scores. The data shows a mean score of 3.78 with a standard deviation of .46. Scores ranged from a low of 2.17 to a high of 4.67. Analysis by gender shows five males with mean score of 4.13, with scores ranging from 3.92 to 4.67. Analysis of the 24 female scores showed a mean score of 3.7 with a range of 2.17 to 4.12.

Correlation Analysis of TBL-SAI and Grit Scale

Correlation studies using Pearson correlation testing show no correlation between students' self-reported Grit Scale and self-reported TBL-SAI data. Pearson correlations

between accountability, preference for lecture or TBL, and satisfaction subscales with grit scores are $r=.002$, $r=.067$ and $r=.122$ respectively. Probability scores are $p=.495$, $p=.365$ and $p=.265$ respectively, showing very little predictive relationships between student grit scores and TBL-SAI scores. Multiple correlations between TBL-SAI subscales and grit data indicates that TBL-SAI data accounts for only 1.7% predictive ability of Grit Scale scores.

Student Preferences for TBL

While no correlation was detected between TBL-SAI subscale and Grit Scale data, TBL-SAI data shows students' strong favorable opinions for TBL versus traditional lecture (see Table 2). The accountability subscale mean score of 35.34 represents a 47% increase over the neutral score of 24. Increases over neutral scores were seen across mean scores for all subscales, with the total mean score representing a 33% increase over neutral scores. Overwhelmingly, students report favoring TBL versus traditional lecture.

Table 2

Mean Scores and Percentage Increase Over Neutral Scores

	<u>Neutral Score</u>	<u>Actual Score</u>	<u>Percent Increase</u>
<u>Scale</u>			
Accountability	24	35.34	47
Preference	48	57.34	19
Satisfaction	27	38.69	43
Total	99	131.38	33

DISCUSSION

To some degree the absence of correlation between student grit and TBL is surprising. It was anticipated that gritty students would prefer the traditional path of lecture, versus the less structured and open discussion format of TBL. A plausible explanation for the lack of correlation between TBL-SAI and grit scores is that gritty students are still able to see value in the less structured environment of TBL because they connect the environment to the attainment of long-term goals (Duckworth et al., 2007). In other words, gritty students naturally adapted to TBL and it simply became part of the perseverance equation that makes individuals gritty in the first place.

While no relationship was found between TBL-SAI and Grit Scale data, the results are none the less interesting. Reported subscale and total scores revealed a significant positive bias in favor of TBL versus traditional learning as evidenced not only by quantitative scoring but by subjective comments. Comments such as, “I really enjoyed my experience and felt that [TBL] could have enhanced many of my undergraduate classes as well”, were very common. Perhaps surprisingly, students also reported believing they learned more from TBL than traditional lecture. Comments such as, “It was an experience that help (sic) me to dig deeper into why I selected an answer and the ‘So what’ behind it....” speak to the depth and breadth of students’ learned and applied knowledge.

Of additional interest is how much students reported feeling accountable and satisfied with TBL versus traditional lecture. It is not just that students simply enjoyed TBL because it was easy or fun, instead students seemed to appreciate the deeper and to some degree more personal accountability of TBL versus traditional lecture. Increased student accountability is an important characteristic of TBL and is often highlighted by developers of TBL as a significant distinction of TBL versus traditional lecture (Michaelsen, Knight, & Fink, 2002; Michaelsen, Parmelee, & McMahon, 2008; Silbley & Ostafichuk, 2014). Using the TBL-SAI as the measurement tool, several studies demonstrate the impact of TBL on student accountability. In a study of three cohorts of doctor of physical therapy students (n=85) receiving TBL, accountability scores on the TBL-SAI ranged from 19% to 22% higher than neutral scores, indicating that students felt more accountable for learning in TBL classrooms compared to traditional lecture classrooms (Livingston, Lundy, & Harrington, 2014). In a 2015 study, Mott and Peuker reported that in four undergraduate mechanical engineering courses (n=173), TBL-SAI accountability subscale scores across the four cohorts averaged 30.5 points. This score is 6.5 points, or 27%, higher than Mennenga’s stated neutral score of 24 (Mennenga, 2012).

However, there is some conflicting evidence regarding the impact of TBL on student accountability. Persky (2012) found that TBL had no improvement on student self-reported accountability for learning. Of some relevance is that Persky’s study used a non-standardized, locally generated assessment versus the standardized TBL-SAI used in the other reported studies. For students entering professional roles, the increased sense of accountability reported overall in the literature bodes well for their future employment where personal and professional accountability are important characteristics of cost-effective patient outcomes (Roberts & Robinson, 2014).

While literature suggests that grit scores are predictive of success, this paper reports a study showing little correlation between a student’s grit and his or her perceptions of TBL. However, the study did show that master’s level occupational therapy students at a private Christian university in central Florida prefer TBL to traditional lecture. This is similar to previous research about student preferences regarding TBL versus traditional lecture. Using a locally generated measure, in a recent study of pharmacy students experiencing TBL, researchers found that students (n=53) significantly preferred TBL to traditional lecture (Frame et al., 2015). In another unrelated study of pharmacy students

(n=201), using the TBL-SAI as the measurement instrument, researchers reported a mean score of 33.0 on the TBL-SAI satisfaction subscale (Nation, Tweddell, & Rutter, 2016). This score is 5 points, or 18%, higher than the satisfaction subscale neutral score of 28.0 (Mennenga, 2012).

Finally, this cohort of occupational therapy students' mean grit score of 3.78 is equal to the highest scores reported by the Grit Scale authors, suggesting that occupational therapy students may be equally as gritty as West Point Military Academy students (Duckworth et al., 2007). This data point is surprising; while OT students are certainly tenacious and outcome driven, they must also be compassionate and caring as future healthcare providers, two characteristics not often attributed to military academy students. Perhaps OT students represent the best of both worlds, including the drive to achieve long-term goals while at the same time being cognizant of others' needs.

Limitations

Several limitations exist in this study. First, the small sample size and rather homogenous nature of the participants limits the possible generalization of the results and conclusions. White females under the age of 30 comprised the vast majority of participants. Whether different results would be obtained with different mixtures of students is interesting and worthy of investigation.

A second limitation is the possibility that student bias overshadowed the effect of grit. TBL-SAI respondents are aware of the investigator's preferences for TBL versus traditional lecture. While the TBL-SAI was administered anonymously, it is possible that student bias to please the instructor skewed students' TBL-SAI answers in a favorable direction.

A third limitation is that the Grit Scale was not administered anonymously. It is possible that students' desire to please the faculty member collecting the data resulted in artificially high grit scores. Additional data from other occupational therapy cohorts is needed to substantiate this possibility.

Implications

This appears to be the first study to collect and report occupational therapy students' grit and TBL-SAI data. It would be valuable to the profession and its educators for data from additional institutions to be gathered and analyzed. Seminal data from a single site, while of some value, has limited generalizability. Collecting grit data from other OT educational institutions teaching with TBL would provide a more complete picture of relationships between students' grit and preferences for TBL versus lecture. Additional TBL-SAI data would also add to the very limited body of information on TBL use and satisfaction within OT education.

The diversity of people working in healthcare suggests the existence of diverse student populations, potentially within occupational therapy programs. Among any such group of students, it is reasonable to assume there are different learning styles. While some studies have found a preferred learning style among learners (Zoghi et al., 2010), a

recent study of physical therapy students (n=48) found that preferred learning styles were evenly spread across the converging (doing and thinking), assimilating (watching and thinking) and accommodating (doing and feeling) spectrum (Milanese, Gordon, & Pellatt, 2013). In general, literature tends to support a variety of learning styles among diverse student populations which could indicate students may have different affinities for TBL versus traditional lecture. However, students in this study overall preferred TBL methods. Occupational therapy student cohorts may present with common learning profiles among students within these programs.

While TBL has increasing evidence supporting both its efficacy and student-preference, there is limited evidence supporting the use of TBL in occupational therapy education. As TBL is rooted in student-oriented problem solving to increase understanding and application, this would support the use of TBL as a strong teaching and learning method for both students and faculty. However, more evidence is needed to support this claim.

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