

# OPTIMIZE KNOWLEDGE SHARING, TEAM EFFECTIVENESS, AND INDIVIDUAL LEARNING WITHIN THE FLIPPED TEAM-BASED CLASSROOM

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## ABSTRACT

Due to the competitive and fast-changing nature of external business environments, university students should acquire knowledge of how to cooperate, share knowledge, and enhance team effectiveness and individual learning in the future workplace. Consequently, the redesign of business courses in higher education merits more discussion. Based on the notions of team-based learning (TBL) and flipped classrooms, we proposed a business course model consisting of three main phases, which have before-class, in-class, and online-course activities. After implementing these course models in two business courses at two public universities in Taiwan, a survey based on social learning and social exchange theories was distributed. A total of 262 business undergraduate students participated in this study. The findings show that team members' valuable contributions are important in teams. This has significant impact on knowledge sharing and team effectiveness. Knowledge sharing also matters in teams since it is a significant mediator between team members' valuable contributions and team effectiveness. In addition, when team effectiveness is higher, students in this class perceive higher levels of individual learning.

## KEYWORDS

Team-based Learning (TBL), Flipped Classroom, Perceived Team Members' Valuable Contributions, Knowledge Sharing, Team Effectiveness, Individual Learning

## 1. INTRODUCTION

Facing the competition and collaboration of today's business environment, a primary goal of business education is to develop a learning environment that prepares students' capabilities in their employability skills as well as exemplifying appreciation for workplace diversity and respect for ethical values (Mitchell et al., 2010; Rutherford et al., 2012). Traditional lecture-based classes have certain pedagogical limitations and cannot provide this type of dynamic curriculum and instruction. This has led educators in higher education to reform the course design by incorporating technology to flip the teaching and learning environment (Al-Zahrani, 2015; Davies et al., 2013). A characteristic of the flipping approach lies in the expectation that students study course-related materials before the class (McCallum et al., 2015), whereas class time is dedicated to activities designed to promote students' application of targeted knowledge, abilities and skills (Albert & Beatty, 2014; Gilboy et al., 2015). Many of these in-class activities are organized in group-based formats in order to foster collaboration, knowledge sharing, and learning processes and outcomes (Findlay-Thompson & Mombourquette, 2014). Thus, the main purpose of this research study is to explore how the flipped classroom concept is integrated into a business course and how this type of flipped approach promotes students' teamwork and individual learning.

## 2. LITERATURE REVIEW

The adoption of team-based learning (TBL) provides students with various scenarios and opportunities with which to strengthen their readiness for the complicated world that awaits them in the future (Chad, 2012; Lightner et al., 2007; Mutch, 1998). Grounded in situations specific to their anticipated workplaces, TBL encourages individual students to interact and connect with other team members along with exchanging ideas and reaching a consensus (Baldwin et al., 1997; Letassy et al., 2008). TBL cultivates students' logical thinking trajectory and active learning by simulating the types of problems students will encounter in workplaces in the future (Kesner et al., 2017). Students move from being passive learners to active learners through the process of collaboration and reflection and they take responsibility for a significant amount of their own subject area learning and the establishment of targeted competencies (Felder & Brent, 1996; Rasiah, 2014).

Transforming the format of traditional transmissive teaching, flipped classroom approaches incorporate before-, during- and after-class tasks, that guide students to share their knowledge and to providing reciprocal constructive feedback (Wallace et al., 2014). In the flipped classroom, students are required to preview course reading or watch videos material before attending a class (Prashar, 2015). During class time, instructors prepare more sophisticated work that promotes students' assimilation of knowledge as well as collaborative learning through strategies including role play, discussion, debates and problem solving. The after-class activities may consist of various types of assignments, such as practicing individual exercises, reading deeper about the course topic, and cooperation on a group project that integrates the in-class teaching and learning (Hwang et al., 2015).

According to social learning theory (Bandura, 1986), students can deepen their learning experience and promote active learning through learning from teammates (Gomez et al., 2010). Thus, in the FC-TBL environment, in which each individual has more opportunities to observe, feel, and learn about other team members' valuable contributions and performance, students might be more willing to contribute their efforts to teamwork as well, and higher team effectiveness can be expected.

H1: Perceived team members' valuable contributions are positively associated with team effectiveness.

Based on social exchange theory, individuals who receive support from the organization or team are more likely to provide feedback and contribute to the organization and team in return (Eisenberger et al., 2001). Accordingly, this FC-TBL course design may have the potential to foster knowledge sharing in a social context. Thus, we posit that when students perceive other team members' valuable contributions, such as sharing knowledge and information with other team members, they are more likely to share what they know in teams.

H2: Perceived team members' valuable contributions are positively associated with knowledge sharing.

Researchers have found that knowledge sharing in teams is critical for team effectiveness since team members rely on each other (Powell et al., 2004). In addition, through knowledge sharing, team members can gain better problem-solving ability (Wellins et al., 1994; Parker, 1990; Nelson & Coopriider, 1996). Hence, as previous studies' findings indicate, we hypothesize that the interaction and communications of knowledge and resources among students can benefit team effectiveness (Tsai & Ghosal, 1998; Hansen, 1999; Tsai, 2000).

H3: Knowledge sharing is positively associated with team effectiveness.

The perceptions of other team members' valuable contributions can be influential toward team operation and performance (Lindsley et al., 1995; Lester et al., 2002). Some team members' stronger willingness to work may motivate themselves or others to actively participate in team activities (Krackhardt & Stern, 1988), and other members would like to do so because all the knowledge and information exchanged become important resources or assets among team members (Burt, 2009). When someone is willing to share resources and information, thus also making themselves more accessible to other team members, this increased accessibility can create a closer and better friendship with each other (Krackhardt & Stern, 1988).

Good friendship is helpful for knowledge sharing and transfer (Dhanaraj et al., 2004) and leads to even more positive benefits for teams, such as team effectiveness. Consequently, we have the following hypothesis.

H4: Knowledge sharing will mediate the relationship between perceived team members' valuable contributions and team effectiveness.

When team members have a stronger team orientation, people are clearer about their roles and jobs in teams (Isabella & Waddock, 1994) and learners have higher perceptions of learning from the collaborative learning (Gomez et al., 2010).

H5: Team effectiveness is positively associated with perceived individual learning.

### **3. METHODS**

#### **3.1 Sample and Procedures**

Participants were 262 business major undergraduate students at two national universities in Taiwan. All of them took the fundamental business courses based on the flipped-classroom designs and team-based learning models organized by our research team in two semesters. A total of 240 surveys were returned, and 218 of them were valid for further data analysis. The response rate was 83.2%.

#### **3.2 Measures**

##### **3.2.1 Perceived Team Members' Valuable Contributions**

This construct was accessed by using the three items which are from a validated survey on asynchronous online communications (Wu & Hiltz, 2004). This construct was rated on a 5-point Likert scale.

##### **3.2.2 Knowledge Sharing**

Knowledge sharing is interaction and knowledge sharing behavior among team members. The construct was accessed by using the eight items derived from Nelson and Coopriders' (1996) and Senge's (1997) studies. This construct was rated on a 5-point Likert scale.

##### **3.2.3 Team Effectiveness**

The scale of team effectiveness was accessed by the use of 6 items. The scale was originally derived from the 8 items in two studies: Jeremy and Mahesh's (2001) and Wang, Yang, and Wu's (2006). In Wang, Yang, and Wu's (2006) study, team effectiveness was rated on a 5-point Likert scale and had two sub-dimensions: performance and quality of work life. One item is about limited budgets in teamwork and is not suitable in this research context, so we eliminated the item.

##### **3.2.4 Perceived Individual Learning**

This construct was accessed by the six items adopted from the prior studies that accessed individual learning in an asynchronous computer-supported learning network context (Wu & Hiltz, 2004; Wu et al., 2004; Wu et al., 2009). This construct was rated on a 7-point Likert scale.

According to scholars' suggestions (Hooper et al., 2008; Hair et al., 2009), standardized factor loadings should be at least .50, thus indicating the reliability of the questionnaire scale. After performing the CFA testing, we deleted some items of the two constructs: knowledge sharing, and perceived individual learning. Overall, we have a total of 20 items in our final questionnaire.

## 4. RESULTS

### 4.1 Findings

Table 1 shows the means, standard deviations, the square root of average variance extracted (AVE) and the correlations for all variables in this study. According to Hair et al. (2006), the estimated inter-correlations among most of the constructs in this study were less than the square roots of AVE of each construct, and this evidence provides support for the discriminant validity of the scales.

Table 1. Means, Standard Deviations, Validity and Correlations of Variables

Variables	Mean	S.D.	1	2	3	4	5
1. Gender	.27	.45					
2. Perceived Team Members' Valuable Contributions	3.77	.57	.05	(.77)			
3. Knowledge Sharing	3.92	.55	-.01	.47***	(.73)		
4. Team Effectiveness	3.91	.56	.04	.45***	.74***	(.73)	
5. Perceived Individual Learning	4.93	.89	.12	.64***	.57***	.50***	(.85)

Note. The diagonal line of the correlation matrix represents the square root of AVE

\*\*\* $p < .001$ , \*\* $p < .01$ , \* $p < .05$ ; N=218

Cronbach's alpha of all variables in this study ranged from .77 to .92. Composite reliability (CR) of all variables ranged from .80 to .93. Namely, both Cronbach's alpha and composite reliability (CR) of each construct exceed .70 threshold values, so the internal consistency reliability is acceptable (Bagozzi & Yi, 1989; Fornell & Larcker, 1981). In addition, the average variance extracted (AVE) of all constructs ranged from .54 to .72, exceeding the .50 threshold value (Bagozzi & Yi, 1989; Fornell & Larcker, 1981), so the results revealed that the convergent validity for all constructs has been achieved

We also performed CFA for each of the latent variables and four-factor SEM model measured by 20 indicators. The result provided the satisfactory model fit indices and evidence of discriminant validity, decreasing the potential influence of common methods variance (Podsakoff et al., 2003; Podsakoff & Organ, 1986). The four-factor model represents the measurement model of this study, indicating different characteristics and concepts of four constructs in our model ( $\chi^2=513.04$ , RMSEA=.07, CFI=.92, TLI=.91, IFI=.92).

### 4.2 Structural Model

The results of direct effects of perceived team members' valuable contributions (standardized direct effect = .43,  $p < .001$ ) on team effectiveness was statistically significant. Hence, hypothesis 1 was supported. To test hypotheses 2 and 3, the second conditions of mediation were implemented. The results of the direct effects of perceived team members' valuable contributions on knowledge sharing (standardized direct effect = .47,  $p < .001$ ) and the direct effect of knowledge sharing on team effectiveness (standardized direct effect = .76,  $p < .001$ , see Figure 3.1) were all statistically significant. Consequently, hypotheses 2 and 3 were supported and the second conditions of mediation were completed.

In addition, the direct effect of team effectiveness on perceived individual learning (standardized direct effect = .60,  $p < .001$ , see Figure 3.1) was significant. As a result, hypothesis 5 was supported.

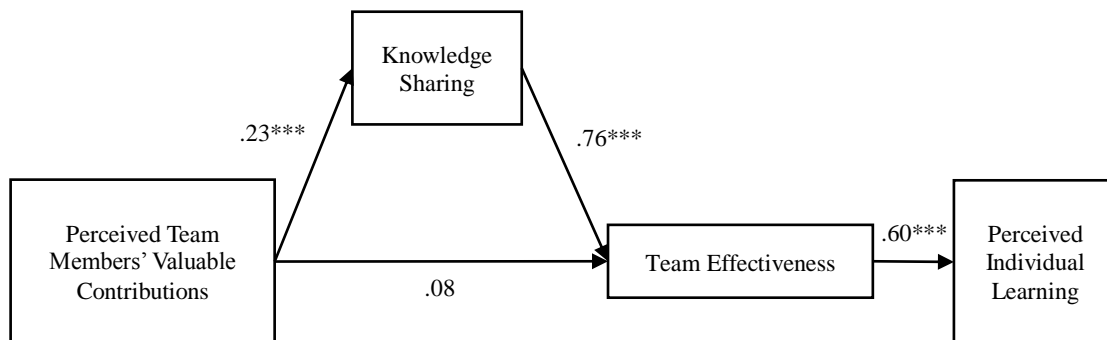


Figure 1. Structural Equation Modeling of the Hypothesized Model

Note. \*\*\* $p < .001$ , \*\* $p < .01$ , \* $p < .05$ ;  $N=218$

In order to investigate the indirect effects of dependent variables through the mediator, knowledge sharing, we conducted bias-corrected bootstrapping and percentile bootstrapping at a 95% confidence interval with 5,000 bootstrap samples (Taylor, et al., 2008). Furthermore, we followed the suggestions of Preacher and Hayes (2008) and calculated the confidence interval of the lower and upper bonds to see whether zero is included in the specific interval to examine if the indirect effect is significant or not. As shown in Table 2, the results of the bootstrapping test confirmed the existence of a positive and significant intervening effect for knowledge sharing between perceived team members' valuable contributions and team effectiveness (standardized direct effect = .29,  $p < .001$ ). Because the Z score of the direct effects in product of coefficients was .64, which is lowered than the criteria of 1.96 threshold value, the direct effect was proven non-existent. Accordingly, hypothesis 4 was supported due to the full mediation found in the aforementioned relationship.

Table 2. The Mediating Effect of Knowledge Sharing Between Perceived Team Members' Valuable Contributions and Team Effectiveness

Point estimation	Product of Coefficients		Bootstrapping			
			Bias-corrected 95% CI		Percentile 95% CI	
	S.E.	Z	Lower	Upper	Lower	Upper
			Indirect Effect			
0.287	0.073	3.932	0.163	0.458	0.155	0.441
			Direct Effect			
0.035	0.055	0.636	-0.069	0.151	-0.068	0.151
			Total Effect			
0.322	0.087	3.701	0.167	0.51	0.165	0.506

Note. Bootstrapping sample of estimation is 5000

## 5. DISCUSSION

In this TBL flipped classroom, evidence shows that a course design that includes three phases is suitable for these business course deliveries and students' learning in business profession. Further, this FC-TBL course design gave students more opportunities to interact and communicate with teammates than did courses in the traditional lecture mode, and also more opportunities to create a learning community. Based on our proposed hypothesized-model, the construct of "perceived team members' valuable contributions" greatly impacts students' "knowledge sharing" (H2) and "team effectiveness" (H1). Knowledge sharing is associated with team effectiveness (H3). H4 reveals that knowledge sharing plays a mediating role between perceived team members' valuable contributions and team effectiveness. Last but not least, team effectiveness is positively related to individual learning (H5).

## 6. CONCLUSION AND FUTURE RESEARCH

Our research findings are generally consistent with previous studies. It has been highly promoted that computer-mediated or blended learning TBL can be viewed as a creative teaching tool to enhance students' learning experience and outcomes (Berge & Collins, 1993; Campbell, 2006; Gomez et al., 2010; Lowry et al., 2006; Wu & Hiltz, 2004; Wu et al., 2009). Moreover, some researchers stated that the flipped classroom models in higher education have become applicable because this teaching approach can take various instructional technology and provide learners more opportunities for active learning in class (Abeysekera & Dawson, 2015; McLaughlin et al., 2014; Roach, 2014). Thus, we designed the TBL flipped classroom and implemented it in business courses for college students and this became our research context. In addition, we examined several important variables regarding students' teamwork and learning in this research context based on the notions of social exchange theory (Blau, 1964) and social learning theory (Bandura, 1986). As mentioned, the factor of perceived team members' valuable contributions is responsible for team members' knowledge sharing. Through the process of knowledge transfer and sharing, team effectiveness and individual learning can be subsequently achieved, which maintain mutual and reciprocal learning atmosphere. The results implied that students in this TBL flipped classroom also interact based on the behavioral concepts of social exchange theory (Blau, 1964) and social learning theory (Bandura, 1986). For instance, individuals will be more willing to share knowledge when they perceive more valuable contributions from their teammates. People not only learn from others; they also help each other to learn in TBL flipped classrooms. Along with more knowledge sharing behaviors in teams, the teams can run better, so team can be more effective and efficient. In the long run, students thought that they can learn better when they work well in teams. That is, whole dynamic processes of conversations and collaboration before, during and after class can deepen each individual learner's understanding of the content subjects through self-directed learning and practical application. In brief, these findings are valuable and insightful for instructors to take into consideration when they implement TBL flipped classrooms.

We tried to include some important course factors and variables in this study, but there are still a number of limitations. First, the research framework was conducted in only one subject area at two universities. Future studies are encouraged to apply and expand this research framework in different course settings. Second, quantitative data was used for research analysis in this study, so different research paradigms can be adopted for exploring additional information and findings regarding similar instructional designs and topics. Third, the research design was conducted by self-report data only. Therefore, we conducted the Harman's one-factor test to ensure whether post hoc testing has a serious CMV problem. The results of this test showed that no serious threat of CMV bias existed in the study. Future studies are encouraged to come up with multiple sources of data collection to tackle this issue.

## REFERENCES

- Abeysekera, L., & Dawson, P., 2015. Motivation and Cognitive Load in the Flipped Classroom: Definition, Rationale and a Call for Research. *Higher Education Research & Development*, Vol. 34, No. 1, pp. 1-14.
- Al-Zahrani, A. M., 2015. From Passive to Active: The Impact of the Flipped Classroom Through Social Learning Platforms on Higher Education Students' Creative Thinking. *British Journal of Educational Technology*, Vol. 46, No. 6, pp. 1133-1148.
- Albert, M., & Beatty, B. J., 2014. Flipping the classroom applications to curriculum redesign for an introduction to management course: Impact on grades. *Journal of Education for Business*, Vol. 89, No. 8, pp. 419-424.
- Bagozzi, R. P., & Yi, Y., 1989. On the Use of Structural Equation Models in Experimental Designs. *Journal of Marketing Research*, Vol. 26, No. 3, pp. 271-284.
- Baldwin, T. T. et al, 1997. The Social Fabric of a Team-Based MBA Program: Network Effects on Student Satisfaction and Performance. *Academy of Management Journal*, Vol. 40, No. 6, pp. 1369-1397.
- Bandura, A., 1986. *The Social Foundations of Thought and Action*. Prentice-Hall, Englewood Cliffs, NJ, USA.
- Berge, Z., & Collins, M., 1993. Computer Conferencing and Online Education. *The Arachnet Electronic Journal on Virtual Culture*, Vol. 1, No. 3, pp. 1-21.
- Blau, P. M., 1964. *Exchange and Power in Social Life*. Wiley Publishers, New York, USA.

- Burt, R. S., 2009. *Structural Holes: The Social Structure of Competition*. Harvard University Press, Cambridge, MA, USA.
- Chad, P., 2012. The Use of Team-Based Learning as an Approach to Increased Engagement and Learning for Marketing Students: A Case Study. *Journal of Marketing Education*, Vol. 34, No. 2, pp. 128-139.
- Davies, R. S. et al, 2013. Flipping the Classroom and Instructional Technology Integration in a College-level Information Systems Spreadsheet Course. *Educational Technology Research and Development*, Vol. 61, No. 4, pp. 563-580.
- Dhanaraj, C. et al, 2004. Managing Tacit and Explicit Knowledge Transfer in IJVs: The Role of Relational Embeddedness and the Impact on Performance. *Journal of International Business Studies*, Vol. 35, No. 5, pp. 428-442.
- Eisenberger, R. et al, 2001. Reciprocation of Perceived Organizational Support. *Journal of Applied Psychology*, Vol. 86, No. 1, pp. 42-51.
- Felder, R. M., & Brent, R., 1996. Navigating the Bumpy Road to Student-centered Instruction. *College Teaching*, Vol. 44, No. 2, pp. 43-47.
- Fornell, C., & Larcker, D. F., 1981. Structural Equation Models with Unobservable Variables and Measurement Error: Algebra and Statistics. *Journal of Marketing Research*, Vol. 18, No. 3, pp. 382-388.
- Findlay-Thompson, S., & Mombourquette, P., 2014. Evaluation of a Flipped Classroom in an Undergraduate Business Course. *Business Education & Accreditation*, Vol. 6, No. 1, pp. 63-71.
- Gilboy, M. B. et al, 2015. Enhancing Student Engagement Using the Flipped Classroom. *Journal of Nutrition Education and Behavior*, Vol. 47, No. 1, pp. 109-114. doi:http://dx.doi.org/10.1016/j.jneb.2014.08.008
- Gomez, E. A. et al, 2010. Computer-supported Team-based Learning: The Impact of Motivation, Enjoyment and Team Contributions on Learning Outcomes. *Computers & Education*, Vol. 55, No. 1, pp. 378-390.
- Hair, J. F. et al, 2006. *Multivariate Data Analysis* (Vol. 6). Pearson Prentice Hall, Upper Saddle River, NJ, USA.
- Hair, J. F. et al, 2009. *Multivariate Data Analysis: A Global Perspective* (7th ed.). Pearson Prentice Hall, Upper Saddle River, NJ, USA.
- Hansen, M. T., 1999. The Search-transfer Problem: The Role of Weak Ties in Sharing Knowledge Across Organization Subunits. *Administrative Science Quarterly*, Vol. 44, No. 1, pp. 82-111.
- Hooper, D. et al, 2008. Structural Equation Modeling: Guidelines for Determining Model Fit. *Electronic Journal of Business Research Methods*, Vol. 6, No. 1, pp. 53-60.
- Hwang, G.-J. et al, 2015. Seamless Flipped Learning: A Mobile Technology-enhanced Flipped Classroom with Effective Learning Strategies. *Journal of Computers in Education*, Vol. 2, No. 4, pp. 449-473. doi:10.1007/s40692-015-0043-0
- Isabella, L. A., & Waddock, S. A., 1994. Top Management Team Certainty: Environmental Assessments, Teamwork, and Performance Implications. *Journal of Management*, Vol. 20, No. 4, pp. 835-858.
- Jeremy, S. L., & Mahesh, S. R., 2001. An Empirical Study of Best Practices in Virtual Teams. *Information & Management*, Vol. 38, No. 8, pp. 523-544.
- Kesner, R. et al, 2017. An Applied Approach to the Teaching of Virtual Work Skills Within a Business School Curriculum. *Ubiquitous Learning: An International Journal*, Vol. 10, No. 2, pp. 11-29.
- Krackhardt, D., & Stern, R. N., 1988. Informal Networks and Organizational Crises: An Experimental Simulation. *Social Psychology Quarterly*, Vol. 51, No. 2, pp. 123-140.
- Lester, S. W. et al, 2002. The Antecedents and Consequences of Group Potency: A Longitudinal Investigation of Newly Formed Work Groups. *Academy of Management Journal*, Vol. 45, No. 2, pp. 352-368.
- Letassy, N. A. et al, 2008. Using Team-based Learning in an Endocrine Module Taught Across Two Campuses. *American Journal of Pharmaceutical Education*, Vol. 72, No. 5, pp. 103. doi:10.5688/aj7205103
- Lightner, S. et al, 2007. Team-based Activities to Promote Engaged Learning. *College Teaching*, Vol. 55, No. 1, pp. 5-18.
- Lindsley, D. H. et al, 1995. Efficacy-performance Spirals: A Multilevel Perspective. *Academy of Management Review*, Vol. 20, No. 3, pp. 645-678.
- Lowry, P. B. et al, 2006. The Impact of Group Size and Social Presence on Small-group Communication: Does Computer-mediated Communication Make a Difference? *Small Group Research*, Vol. 37, No. 6, pp. 631-661.
- McCallum, S. et al, 2015. An Examination of the Flipped Classroom Approach on College Student Academic Involvement. *International Journal of Teaching and Learning in Higher Education*, Vol. 27, No. 1, pp. 42-55.
- McLaughlin, J. E. et al, 2014. The Flipped Classroom: A Course Redesign to Foster Learning and Engagement in a Health Professions School. *Academic Medicine*, Vol. 89, No. 2, pp. 236-243.
- Mitchell, G. W. et al, 2010. Essential Soft Skills for Success in the Twenty-first Century Workforce as Perceived by Business Educators. *The Journal of Research in Business Education*, Vol. 52, No. 1, pp. 43-53.
- Mutch, A., 1998. Employability or Learning? Groupwork in Higher Education. *Education + Training*, Vol. 40, No. 2, pp. 50-56. doi:10.1108/00400919810206884

- Nelson, K. M., & Coopridge, J. G., 1996. The Contribution of Shared Knowledge to IS Group Performance. *MIS Quarterly*, pp. 409-432.
- Parker, G. M., 1990. *Team Players and Teamwork*. Jossey-Bass, San Francisco, CA, USA.
- Podsakoff, P. M., & Organ, D. W., 1986. Self-reports in Organizational Research: Problems and Prospects. *Journal of Management*, Vol. 12, No. 4, pp. 531-544.
- Podsakoff, P. M. et al, 2003. Common Method Biases in Behavioral Research: A Critical Review of the Literature and Recommended Remedies. *Journal of Applied Psychology*, Vol. 88, No. 5, pp. 879-903.
- Powell, A. et al, 2004. Virtual Teams: A Review of Current Literature and Directions for Future Research. *ACM Sigmis Database*, Vol. 35, No. 1, pp. 6-36.
- Preacher, K. J., & Hayes, A. F., 2008. Asymptotic and Resampling Strategies for Assessing and Comparing Indirect Effects in Multiple Mediator Models. *Behavior Research Methods*, Vol. 40, No. 3, pp. 879-891.
- Rasiah, R. R. V., 2014. Transformative Higher Education Teaching and Learning: Using Social Media in a Team-based Learning Environment. *Procedia-Social and Behavioral Sciences*, Vol. 123, pp. 369-379.
- Roach, T., 2014. Student Perceptions Toward Flipped Learning: New Methods to Increase Interaction and Active Learning in Economics. *International Review of Economics Education*, Vol. 17, pp. 74-84. doi:<http://dx.doi.org/10.1016/j.iree.2014.08.003>
- Rutherford, M. A. et al, 2012. Business Ethics as a Required Course: Investigating the Factors Impacting the Decision to Require Ethics in the Undergraduate Business Core Curriculum. *Academy of Management Learning & Education*, Vol. 11, No. 2, pp. 174-186.
- Senge, P., 1997. Sharing Knowledge: The Leader's Role is Key to a Learning Culture. *Executive Excellence*, Vol. 14, pp. 17-17.
- Taylor, A. B. et al, 2008. Tests of the Three-path Mediated Effect. *Organizational Research Methods*, Vol. 11, No. 2, pp. 241-269.
- Tsai, W., 2000. Social Capital, Strategic Relatedness and the Formation of Intraorganizational Linkages. *Strategic Management Journal*, Vol. 21, No. 9, pp. 925-939.
- Tsai, W., & Ghoshal, S., 1998. Social Capital and Value Creation: The Role of Intrafirm Networks. *Academy of Management Journal*, Vol. 41, No. 4, pp. 464-476.
- Wallace, M. L. et al, 2014. "Now, What Happens During Class?" Using Team-based Learning to Optimize the Role of Expertise Within the Flipped Classroom. *Journal on Excellence in College Teaching*, Vol. 25, No. 3/4, pp. 253-273.
- Wang, M.-H. et al, 2006. The Impact of ISD Team Members' Self-efficacy, Team Interaction and Team Trust on Team Effectiveness: The Mediating Effect of Knowledge Sharing. *NTU Management Review*, Vol. 16, No. 2, pp. 73-99.
- Wellins, R. S. et al, 1994. *Inside Teams: How 20 World-class Organizations Are Winning Through Teamwork*. Jossey-Bass, San Francisco, CA, USA.
- Wu, D. et al, 2009. Asynchronous Participatory Exams: Internet Innovation for Engaging Students. *IEEE Internet Computing*, Vol. 13, No. 2, pp. 44-50.
- Wu, D. et al, 2004. Constructivist Learning with Participatory Examinations. *Proceedings of the HICSS 37th Hawaii International Conference on Systems Sciences*. Big Island, Hawaii.
- Wu, D., & Hiltz, S. R., 2004. Predicting Learning From Asynchronous Online Discussions. *Journal of Asynchronous Learning Networks*, Vol. 8, No. 2, pp. 139-152.