

## Does Competition-Based Learning Enhances Learning Ability? A Preliminary Study on the Finance Education

Amirudin Mohd Nor, Siti Nurulhuda Ibrahim, Nurhaslinda Hashim, Munirah Mohamed

Faculty of Business and Management, Universiti Teknologi MARA Melaka, 110 Off Jalan Hang Tuah, 75330 Melaka, Malaysia

Corresponding Authors Email: amirudinmn@uitm.edu.my

To Link this Article: <http://dx.doi.org/10.6007/IJARBSS/v12-i10/14918> DOI:10.6007/IJARBSS/v12-i10/14918

**Published Date:** 16 October 2022

### Abstract

Competition-Based Learning (CBL) is a one of the innovative learning methodologies that is gaining interest among academicians. This topic requires further attention owing to its potential to boost students' learning outcomes, motivation and performance. This empirical study tries to illustrate one example on how a competition-based learning can be incorporated into a finance subject particularly in the technical analysis course. The objective of the study is to determine whether competition-based learning enhances learning ability or otherwise. Adopting the quantitative research methodology, a standard online questionnaire on a set of 79 students from three financial course groups were undertaken. A descriptive analysis was used to discover whether the competition-based learning helps to enhance the students learning experience. The results suggest that the students are of the opinion that the method of assessment has enhanced their learning ability in the course. The competition element produces an interesting learning experience and admire students to explore further the subject, whilst achieving the learning outcomes. Among further research proposed includes performing a thorough research to confirm the competition-based learning effectiveness and integrating the competition-based learning into other subject in the finance education.

**Keywords:** Competition-Based Learning, Competition-Based Assessment, learning ability, Technical Analysis, Anateks.

### Introduction

Competition-Based Learning (CBL) is a methodology where learning is achieved through a competition, but the learning result is independent of the student's score in such competition (Johnson et al., 1985). It is new learning model aiming at enhancing the learning process and boosting the levels of learning outcomes (Issa et al., 2014) and increased students' motivation and performance (Burguillo, 2010). CBL is in fact an innovative and promising learning method

(Alyazeedi & Berry, 2018) suitable for the new generation of learners. Interestingly, CBL can be integrated with other learning methodology for instance the Project-based learning (PBL) to bring the best out of the learning process. PBL with the added element of competition can serve to develop numerous student skills and stimulate student interest in course content (Willard & Duffrin, 2003). In such situation, students have the opportunity to apply newly acquired skills in meaningful and productive ways, while increasing their retention of the new material and developing the critical thinking skills that are necessary to solve everyday problems. In a much similar scenario, problem-based learning (PBL) with a twist of CBL let the students gain practical experience and helps them to be more business-ready upon graduation (Desai et al., 2014). Apart from that, as we will discover later in this study, the students are also exposed to the industry-based learning while the achievements and certificates from the competitive activities in the form of competition adds up value to the student's credentials in their resume.

Notwithstanding the above, the methodology in CBL can also be used in different courses and disciplines (Willard & Duffrin, 2003; Burguillo, 2010). Studies on the competition-based learning has been undertaken in various discipline for instance in food and nutrition (Willard & Duffrin, 2003), digital system (Tukiran et al., 2008), telecommunication engineering education (Burguillo, 2010), engineering education (Mohan et al., 2008; Li et al., 2009; Carroll, 2013), mechatronic (Chen et al., 2014; Grover et al., 2014), nursing education (Alyazeedi, et al., 2018; Sung, 2022), business management (Desai, et al., 2014) and blockchain programming (Culha, 2021). Notwithstanding the above, the literature with regards to this area is somehow scarce in the finance education, specifically in the technical analysis subject. Such scenario makes the motivation to pursue a study on competition-based learning in the area of finance specifically the technical analysis subject even more appealing for the benefit of the students and the teachers themselves.

Employing the quantitative analysis research, a set of structured online questionnaires were used to collect the data. As such, this empirical preliminary study was undertaken with the objective to identify whether the competition-based learning helps to enhance the finance students learning experience. It also discusses the competition-based activities introduced to a second-year introductory technical analysis subject for the finance major. We expect the addition of competition element would make technical analysis subject to be more interesting whilst capturing the interest and providing new learning experience to the learners and the teachers combined together.

The idea of the work presented herein explores the application of competition-based learning in an existing and ongoing academic course in a university. It complemented the existing presentation and project-based learning already designed for the course. This study tries to illustrate one example on how a competition-based learning can be incorporated into a finance subject particularly the technical analysis course. The main contribution of this project is the inclusion of competitive-based approach to complement the existing project-based learning making the course full with the elements of fun, excitement, healthy competition, incentives and motivation while learning, applying and retaining the knowledge gained.

The remainder of this paper is organized as follows: In section two, we briefly describe the background of the study. In section three, we presented the methodology, followed by the results and discussion coupled with recommendation at the end of the paper.

### **Background Information**

Technical analysis being part of stock market analysis is becoming more popular among stock market practitioners and academicians. It is heavily used technique for decades in financial practice and has grown to an industry on its own (Griffioen, 2003). In technical analysis, historical financial data such as stock price and its volumes are used along several technical indicators to predict future financial prices. The objective is to make profits based on the trading signals produce by the technical analysis software. Thus, the ability to master technical analysis skill is hence a major advantage for stock market investors and prospective employees of the stock market industry (Nor et al., 2020).

Consistent with the above, Universiti Teknologi MARA (UiTM), Malaysia has introduced Introduction to Technical Analysis subject in its Bachelor of Business Administration (Finance) curriculum. The objective is to equip the students with hands-on skills and knowledge on investment decision tools using technical analysis, in a practical environment assisted by software packages and real time trading experience at Bursa Malaysia.

The course is designed to introduce the students on the concept and the application of technical analysis, the various technical indicators and investment decision using technical tools. It revolves around the techniques and strategies employed in technical analysis software, employing both basic and advance indicators to analyze investment decision. Basic understanding of technical analysis includes the understanding of charts, patterns, trends as well as a formation of price movement. It is a compulsory subject in the finance cohort where students are required to complete class lectures in a 14-week duration.

### **Methodology**

Feedback from the students is crucial in this project. The students' feedback is based on their experience participating in the Competition-Based activity known as ANATEKS Competition-Based Assessment (ANATEKS CoBA) Project that will be described later in the next section. The students' feedback in the form of online Student Feedback Online (SFO) assessment was used to determine the success and continuity of this project. SFO is an online assessment medium for teaching and learning developed by the university. Students are required to answer a few questions online to identify the course performance and simultaneously provide feedback with regards to the course offered. Consistent with the preliminary research and quantitative nature of this research, the data was extracted and processed using Microsoft Excell spreadsheet software. Finally, we adopt the descriptive analysis technique to discover whether the competition-based learning helps to enhance the students learning experience.

### *Respondents and Procedure*

Three groups consisting of 79 second year students from the Bachelor of Business Administration (Finance) were chosen as respondents for this project. Details of the respondents for this project is as per Table 1 below.

Table 1

*Respondents Demographic*

	Group A	Group B	Group C	Total
No of respondents	18	33	28	79
Gender- Male	3	6	7	16
Gender- Female	15	27	21	63
Course	Finance	Finance	Finance	-
Level	Degree	Degree	Degree	-
Year of study	2 <sup>nd</sup> year	2 <sup>nd</sup> year	2 <sup>nd</sup> year	-

*Competition-Based Assessment*

This course has been taught and assessed using project-based learning and presentation as one of its learning and assessment methods. Students work individually as well as in groups to complete the assigned tasks. The project and presentation approach are excellent, however, they lack the excitement and motivation in learning. Hence, we adopted the methodology of Willard & Duffrin (2003) and bring in the element of competition in the course assessment. Hence, course assessment on this subject covering the theories and practical aspects has been harmonized to include a structured competition-based activity named Competition-Based Assessment (CoBA), a sub-activity under the main project known as ANATEKS (“Asas Analisa Teknikal Saham”).

ANATEKS CoBA is a subcomponent of a larger project named ANATEKS. ANATEKS, a short form for “Asas Analisa Teknikal Saham” or introduction to technical analysis, is an innovative procedure in teaching and learning specifically in the technical analysis subject in the finance education. ANATEKS was developed as an eContent educational platform catering for the first-time learners in technical analysis. The platform provides introductory information on the subjects in a compact duration via short videos, pdf documents that are accessible through ANATEKS websites (Nor, Jantan, Salim, Azuar & Binti, 2021).

The ANATEKS CoBA embarked on the VAC Assessment-Based Assignment. VAC consists of three components: (1) Video Competition, (2) Analyst Report Competition and (3) Corporate Presentation Competition. VAC was harmonized based on the continuous assessment in the course information sheets, while preserving its original assessment. It is designed to suit the original course requirements while providing an industry-based, challenging and fun learning experience to the students. In this competition, students are required to perform a technical analysis study on assigned companies listed in Bursa Malaysia using the charting and drawing tools function in Chart Nexus software.

*(1) Video Competition (VC)*

A competition named “Ultimate Guide to Technical Analysis Indicators: Lifesavers Edition” was organized. The competition requires the students to apply technology and produce a short educational video for new investors in the market. Here, students have to elaborate theories and knowledge and subsequently convey them to the prospective investors. Students are required to use the technical analysis software i.e Chart Nexus in explaining the topics. The usage of this software is mandatory as one of the objectives of the course is to learn the practical side of chart reading.

Table 2

*CoBA VAC Assessment on Video Competition*

---

**The Scenario:**

UiTM Melaka Kampus Bandaraya Research Team is planning to produce an educational video on Technical Analysis for its potential customers. This educational video is targeted for the use of new investment bank customers who wish to apply the technical analysis techniques in their trading strategies.

**Instructions:**

- 1) The class will be divided into a group of 3 students.
- 2) Each student will be assigned companies from Bursa Malaysia.
- 3) Each team is required to produce a video on the following assigned topics/ chapters: Support and resistance, trendlines, volume, Moving Average (MA), Envelopes, Bollinger Band, Rate of Change (ROC), Relative Strength Index (RSI), Moving Average Convergence Divergence (MACD), Stochastic, Candlestick Chart.
- 4) The plan is to produce a simple and easy to understand video explaining (i) the theory and (ii) the practical application of the various techniques (using the assigned companies).
- 5) Students are required to do some research on those indicators (definition, concept, theory, practical application) prior to developing the videos. Students must make sure the potential customers understand the basic of these indicators.
- 6) The length of the video is between 6 - 10 minutes. Publishing via Youtube is recommended.
- 7) Free video presentation style up to the team's creativity.

**Judging Criteria:**

Organization  
Content  
Presentation

**Winners**

Students will be ranked according to their marks. The top 5 highest marks will be announced as winners to be crowned as 'UiTM Melaka (Kampus Bandaraya), Top 5 Best Videos on Technical Analysis'. Certificate of Award will be presented to recognize the winners' high achievement.

---

*(2) Analyst Report Competition (ARC)*

The analyst report competition mocks the analyst report produced in the stockbroking industry. Subsequent to the learning phase, students are exposed to industry-based analyst report such as the analyst report from Maybank Investment Bank, RHB Investment Bank and Kenanga Investment Bank. A standard template is provided for easy assessment. The standard template was devised based on the industry analyst report. In preparing for this competition, students must apply the technical analysis knowledge and practical application to the real-world issues particularly the listed companies in Bursa Malaysia. Comments, analysis and recommendation is mandatory as if the students are considered the analyst themselves.

Table 3

**CoBA VAC Assessment on Analyst Report Competition**

---

**The scenario**

Let's assume that you work as a Technical Analyst in an Investment. Your job is to analyze investments and predict future price movements based on past market prices and apply various technical indicators for investment decision making. As part of the company valuable client services, you are required to prepare a report to assist the banks' client in making investment decisions. A convincing but yet short and easy to understand analyst report is required here. Apart from the analysis using various technical indicators, the final recommendation to buy, sell or hold with evidence is mandatory.

**Instructions:**

- 1) You are required to perform a technical analysis study on an assigned company listed in Bursa Malaysia. Give your recommendation with evidence for the selected companies. Please take note that the analysis should be the current time frame as you will be recommending either to buy, sell or hold at the present time.
- 2) Do not utilize a textbook approach to presenting your report.
- 3) Discuss and analyze the current signal based on various indicators: support and resistance, trendlines, volume, Moving Average (MA), Envelopes, Bollinger Band, Rate of Change (ROC), Relative Strength Index (RSI), Moving Average Convergence Divergence (MACD), Stochastic, Candlestick Chart. Give your overall recommendation buy, sell or hold!
- 4) The usage of the Charting and Drawing Tools function in ChartNexus software in assisting the analysis is recommended (looks professional!).
- 5) Please submit a report (using the report format) not exceeding 2 pages.

**Judging Criteria:**

Writing  
Structure  
Graphics, figures, tables  
Analysis  
Grammar and references  
Plagiarism

**Winners**

Students will be ranked according to their marks. The top 5 highest marks will be announced as winners to be crowned as UiTM Melaka (Kampus Bandaraya) Top 5 Analysts (Best Analyst Report).

Certificate of Award will be presented to recognize the winners' high achievement.

---

**(3) Corporate Presentation Competition (CPC)**

CPC requires the students to critically convey their ideas and recommendation via a group presentation. Since this is part of the practical academic exercise, the students have to adopt the corporate presentation style in this competition.

Table 4

*CoBA VAC Assessment on Corporate Presentation Competition*

---

**The scenario:**

Let's assume that you work as a Technical Analyst in an investment bank who currently holds a BBA Finance as well as a professional technical analyst certificate from Malaysia Technical Analysis Association (MATA). Your job is to analyze investments and predict future price movements based on past market prices and apply various technical indicators for investment decision making. As part of the company valuable client services, your team are required by your CEO to present several tactical trading ideas at a client seminar attended by the company's selected high net worth client. A convincing and energetic presentation is a must as this will add to the plus point for your upcoming bonus. The final recommendation to buy, sell or hold with evidence is mandatory.

**Instructions:**

- 1) You are required to perform a technical analysis study on an assigned company listed in Bursa Malaysia. Give your recommendation with evidence for the selected companies.
- 2) The length of the presentation is 15 minutes.
- 3) The format is a formal corporate presentation with free presentation style up to your team's creativity.

**Judging Criteria:**

Organization  
Content  
Presentation

**Winners**

Students will be ranked according to their marks. The top 5 highest marks will be announced as winners to be crowned as 'UiTM Melaka (Kampus Bandaraya) Top 5 Analysts (Best Presentation)'.

Certificate of Award will be presented to recognize the winners high achievement.

---

**Results and Discussion**

In this section, we provide the results from the competition-based assignments done on three groups of second year classes consisting of 79 finance major students that are segregated into 25 competing groups. Table 5 depicts the overall impression about the course offered while Table 6 shows the results of SFO on the specific question related to this study.

Table 5

*Students' Feedback Online (SFO) Results (Overall)*

	Group A Average %	Group B Average %	Group C Average %	Overall ABC %
<b>Overall Impression about the course:</b>				
(1) I have increased my knowledge from taking the course.	93.06 91.67	90.91 90.91	93.75 94.64	92.41 92.41
(2) The course content is related to my field of study.	91.67	92.42	94.64	93.04
(3) The method of assessments in this course has enhanced my learning ability.	88.89	91.67	90.18	90.51
(4) My confidence level in this course has increased.				
Overall Average	91.32	91.48	93.30	92.09
Scale % / Indicator	Excellent	Excellent	Excellent	Excellent

*Note: Scale @ Indicator in percentage (%) is as follows: 90–100 (Excellent), 80–89 (Very Good), 70–79 (Good), 60–69 (Average), Below 60 (Weak).*

Overall, the impression about the course is classified as excellent as indicated by the group average score ranging from 91.32% to 93.30%, with the overall excellent average of 92.02%.

In our case, apart from the feedback on the overall impression about the course, our focus is centered into a specific question on the method of assessment which is one of the mandatory questions. The specific question related to this study is: "The method of assessment in this course has enhanced my learning ability".

The results in Table 6 reveal that the three groups have given an impressive average mark ranging from 91.67% to 94.64%, with a total of 93.04% for overall average for the three groups thus achieving an 'excellent' status in the indicator scale. The results suggest that the students are of the opinion that the method of assessment has enhanced their learning ability in this course at an excellent rate. As such, with we can conclude that the competition-based assessment or CoBA helps to enhance the students' learning ability. Such positive response signaled that CoBA can be continued in the semester to come.

Table 6

*Students' Feedback Online Results on the Question "The method of assessment in this course has enhanced my learning ability"*

Group	Respondent	Results				Average (%)	Indicator
		Strongly Disagree	Disagree	Agree	Strongly Agree		
A	18	0	0	6	12	91.67	Excellent
B	33	0	0	10	23	92.42	Excellent
C	28	0	0	6	22	94.64	Excellent
<b>Total</b>	<b>79</b>	<b>0</b>	<b>0</b>	<b>22</b>	<b>57</b>	<b>93.04</b>	<b>Excellent</b>



Note: Scale (%)/ Indicator is as follows: 90–100 (Excellent), 80–89 (Very Good), 70–79 (Good), 60–69 (Average), Below 60 (Weak).

### Conclusion

This paper discusses the competition-based learning applied in the technical analysis subject in the finance course. It was done to complement the project-based learning already in use by the university, hoping that the competition activities would add the elements of motivation and fun besides applying the industry-based learning into the course. The competition revolves around three areas; video competition, analysts report competition and corporate presentation competition. In all the competition, students are required to apply their technical analysis knowledge learnt in class and practical skills from the lab sessions and industry inputs.

Overall, the students are of the opinion that the method of assessment has enhanced their learning ability in the course at an excellent rate. As such, we can conclude that ANATEKS CoBA project helps to improve the students' learning experience. This assessment method can be continued and to be assessed again in the future to confirm its effectiveness. The competition-based learning can also be applied into other subject in the finance education. As at now, ANATEKS CoBA seems to be a success story.

### References

- Alyazeedi, B., & Berry, D. C. (2018). Competition-Based Learning (CBL) in Nursing Education. *Nursing Education Research Conference 2018*.
- Burguillo, J. C. (2010). Using game theory and Competition-based Learning to stimulate student motivation and performance. *Journal Computers & Education archive*, 55(2), 566–575.
- Carroll, C. (2013). Competition based learning in the classroom. *120<sup>th</sup> ASEE Annual Conference & Exposition*. (pp. 23-33).
- Chen, D., Li, Z., & Wang, T. (2014). Exploration and practice: A competition-based project practice teaching mode. *Mechatronics*, 24(2), 128-138.
- Culha, D. (2021). Competition-based learning of blockchain programming. *Journal of Educational Technology and Online Learning*, 4(1), 46-55.
- Desai, A., Tippins, M., & Arbaugh, J. B. (2014). Learning through collaboration and competition: Incorporating problem-based learning and competition-based learning in a capstone course. *Organization Management Journal*, 11(4), 258-271.
- Issa, G., Hussain, S. M., & Al-Bahadili, H. (2014). Competition-based learning: A model for the integration of competitions with project-based learning using open source LMS. *International Journal of Information and Communication Technology Education (IJICTE)*, 10(1), 1-13.
- Griffioen, G. A. (2003). Technical analysis in financial markets.
- Grover, R., Krishnan, S., Shoup, T., & Khanbaghi, M. (2014). A competition-based approach for undergraduate mechatronics education using the Arduino platform. Paper presented at the Interdisciplinary Engineering Design Education Conference (IEDEC), 2014 4th Santa Clara, CA.
- Johnson, R. T., Johnson, D. W., & Stanne, M. B. (1985). Effects of cooperative, competitive, and individualistic goal structures on computer-assisted instruction. *Journal of Educational Psychology*, 77(6), 668e677.

- Li, V., Lau, K., Li, S. K., Lee, L., Chow, C., & Lam, D. C. (2009). Beyond outcome-based: Competition-based learning for engineering students. Paper presented at the International Conference on Modern Industrial Training.
- Mohan, R. E., Calderon, C. A. A., Zhou, C., Zhang, L., & Yang, Y. (2008). Experimenting Competition based learning of engineering topics with soccer playing humanoid robots. Paper presented at the 10th Asia Pacific Conference on Giftedness, Singapore.
- Nor, A. M., Jantan, M. J., Abu Zarin, N. A., Marzuki, A. I. N., & Halim, N. A. (2020). ANATEKS: An eContent learning for 'Technical Analysis'. *International Jasin Multimedia & Computer Science Invention & Innovation Exhibition (3rd edition)*, pp. 48-51.
- Nor, A. M., Jantan, M. J., Salim, S. S. B., Azuar, N. I. B., & Binti, N. (2021). Flexible Learning Using ANATEKS Flexi e-Content Medium: An Innovative Effort in Times of Covid-19 Pandemic. *i-JaMCSIX Universiti Teknologi MARA Cawangan Melaka*, pp. 31-34.
- Sung, H. Y. (2022). A Competition-Based Problem-Posing Approach for Nursing Training. In *Healthcare* (Vol. 10, No. 6, p. 1132). Multidisciplinary Digital Publishing Institute.
- Tukiran, Z., Fuad, N., Mohamad, S., Isa, K., Muji, S. Z. M., & Jumaat, S. A. (2008). PenerapanKemahiran Insaniah Melalui Program Pertandingan ALTERA® UP-1 Board. Paper presented at the Persidangan Pembangunan Pelajar Peringkat Kebangsaan 2008, Universiti Teknologi Malaysia.
- Willard, K., & Duffrin, M. W. (2003). Utilizing project-based learning and competition to develop student skills and interest in producing quality food items. *Journal for Food Science Education*, 2(4), 69–73.