

# Business students' perspectives on case method coaching for problem-based learning: impacts on student engagement and learning performance in higher education

Perspectives  
on case method  
coaching

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## Abstract

**Purpose** – The aim of this study is to examine the experiences of business students on case method coaching for problem-based learning and its influence on student engagement and learning performance in the context of Malaysian private higher education.

**Design/methodology/approach** – This study applied quantitative method with a self-administered questionnaire survey was used to collect data from 410 undergraduate business students from five top private universities in Malaysia using convenience sampling. Structural equation modelling (SEM) was used to analyse the data, and five hypotheses were tested.

**Findings** – The findings reported that learning assessments, analytical skills, interpersonal skills and interdisciplinary learning have significantly influenced student engagement. Student engagement is positively correlated to the learning performance. Overall, the business students have positive perception on the case method coaching approach for problem-based learning as an effective learning tool in classroom. The case method coaching is able to garner students' interest in learning, improve engagement with peers and educators and enhance their learning performance.

**Practical implications** – Higher education institutions can leverage on effective planning and implementation strategies for case method coaching for problem-based learning through more effective coaching strategies, enhance education curricula, allocation of adequate resources, and qualified and trained business educators as coaches.

**Originality/value** – The present study provides new insights on coaching in business education. This study developed a new framework integrating features of case method coaching and problem-based learning to the outcomes of student engagement and learning performance within the context of business education.

**Keywords** Case method, Coaching, Problem-based learning, Student engagement, Learning performance, Teaching and learning

**Paper type** Research paper

## Introduction

In the current competitive and globalized economy, higher education institutions are responsible to produce graduates with relevant competencies and skills that are desired by employers and in line with industry needs. Higher education institutions are facing challenges to innovate teaching and learning methodologies to enhance students' learning experience, skills and academic performance. Specifically in business education, the increasing emphasis is given on graduate attributes, case methods, blended learning and multidisciplinary learning, which are all important elements to prepare the business students to compete in the challenging job market (Avolio *et al.*, 2019).



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The case method approach is becoming an increasingly important teaching strategy in business education. Case method is very competent to develop most graduate attributes because it involves the combination elements of global perspective, multidisciplinary learning improve creative and innovative thinking, develop entrepreneurial skills, immerse to real business organization environment, develop communication skills and emphasize on application of theory to practice through business cases and analysis (Nkhoma *et al.*, 2017a; Avolio *et al.*, 2019). Educators have used different approaches from traditional teaching (Bonney, 2015; Reed and Brunson, 2018) to coaching (Orr and Sonnadara, 2019) for effective implementation of the case method learning. The process of case method involves commitment by the students to reflect the case, work together with fellow students to resolve the problem, ultimately, provide possible solution to the problems and discuss the likely consequences of their suggested solution (Esteban and Cañado, 2004).

Coaching has been employed diversely and successfully in various fields such as sports, business, music and corporate worlds. Coaching in education is getting popular, particularly in the medical (Wang *et al.*, 2016a; Orr and Sonnadara, 2019) and business (Yanovska *et al.*, 2019) education. In the field of education, coaching involves the educator (coach) and learner (coachee) whereby the educator observe, guide and provide contemporaneous feedbacks to learners to maximize the learner's full potential and achieve a measurably improved performance (Lovell, 2018). Coaching creates and facilitates a learning environment (Brinkley and le Roux, 2018). Coaching can be an effective educational strategy to achieve improved learner's performance, motivation, self-efficacy and goal attainment (Orr and Sonnadara, 2019).

The case method coaching is used to immerse students in realistic business situations (Trejo-Pech and White, 2017). Case method learning and coaching approaches aimed to provide business students with the opportunity to promote dynamic group discussion (Bonney, 2015) or self-directed learning teamwork (Rezaee and Mosalanejad, 2015). This approach draws students' collective knowledge of business and management and encourages them to extract useful lessons that they have learnt from the experiences of other as term as "cases". Students will learn how to identify and utilize relevant theories and concepts derived from a business case and then develop analysis-based solutions, recommendations and action plans. The ultimate objective is the educators to coach students to become an expert at analysing business cases when they join the real-world business community.

The case method is a highly adaptable teaching style that involves problem-based learning (Herreid *et al.*, 2011). Problem-based learning focussed on students' ability to learn and apply the skills of critical thinking, problem identification, problem-solving abilities and communication. Therefore, problem-based learning is an integrated pedagogical approach as it explicitly and actively engages students in a learning and teaching system, combining both essential domain knowledge and skills (Kek and Huijser, 2011), as well as integrating content, thinking and communication (Allen and Rooney, 1998; Esteban and Cañado, 2004). Through the case method for problem-based learning, it facilitates the development of the higher levels of Bloom's taxonomy focussing on deeper cognitive processing involving evaluative judgements and critical thinking; moving beyond the levels of application, analysis and evaluation (Nkhoma *et al.*, 2017a; Anderson and Krathwohl, 2000). Problem-based learning has been widely adopted for the curriculum delivery model at many education institutions around the world (Mills and Treagust, 2003).

Despite the increasing adoption of problem-based learning in today's learning and teaching system, there are few challenges faced by the learners and educators at higher education. It is crucial for students to have the combination of knowledge and skills, such as critical thinking, problem-solving and communications skills, to effectively apply case method learning effectively (Kek and Huijser, 2011). Geissler *et al.* (2012) stressed that students often lack generic skills that are required by employers, such as communication, critical thinking, problem-solving, creativity, judgement, analytical and teamwork.

Hence, students have to acquire those skills at tertiary education level before preparing themselves to the real working environment.

At the higher education, educators are exploring the effective methods for problem-based learning, which includes case studies, role-plays and simulations. Case method was found to be more effective than role-plays (Sexton and Garner, 2020) and more widespread than simulations (Santos and Gomide, 2013) in business education. Compared to role-plays and simulations, case method is more beneficial in the aspect of its applicability to the real business world scenario, analyse complexity situation, theory-building and facilitates well-structured case discussions focussing on problem-solving, decision-making and critical thinking (Almohaimi *et al.*, 2017; Pilz and Zenner, 2018; Bennett, 2004). There is a need for educators to rethink their current teaching routines to adopt the best methods or pedagogies (Almohaimi *et al.*, 2017; Kek and Huijser, 2011). In view that many claims are made for case method as an effective learning and teaching approach, however, very little evidence is quoted to support these claims (Thistlethwaite *et al.*, 2012). There are lack of measures on the effectiveness of case method approach for problem-based learning on student engagement and learning performance outcomes (Bonney, 2015; Nkhoma *et al.*, 2017b). Furthermore, there is paucity of research to prove the effectiveness of case method coaching for problem-based learning, as a new teaching and learning approach, in business education context. Nkhoma *et al.* (2017a) stressed that there is a need to investigate the effect of case method learning on students' engagement and individual learning performance. Specifically in higher education, the appropriate learning approaches and strategies should be explored and suggested for instructors to effectively support students' case-based learning (Raza *et al.*, 2019). Past studies have investigated case method coaching in medical (Wang *et al.*, 2016a; Orr and Sonnadara, 2019), nutritional (Harman *et al.*, 2015) and sciences (Bonney, 2015) studies, however, limited of literature in the context of business education.

Therefore, we conduct this study to address the research gap by focussing at business students' perspectives on case method coaching for problem-based learning in the context of higher education and further identify how this method will enhance student engagement and learning performance in higher education. The research questions underlying this study are:

- RQ1. What are the tertiary business students' perspectives on case method coaching for problem-based learning?
- RQ2. What are the inter-relationships amongst analytical skills, learning assessments, interdisciplinary learning, motivation and interpersonal skills of case method coaching, and their impact on student engagement, and learning performance?

The objective of present study aims to examine the tertiary business students' perspectives on case method coaching for problem-based learning in the aspect of learning assessments, analytical skills, interpersonal skills and interdisciplinary learning, in influencing student engagement and learning performance in the Malaysian private higher education context. For theoretical implications, this study developed a new framework integrating features of case method coaching and problem-based learning to the outcomes of student engagement and learning performance within the context of business education. The practical contributions are educators at higher education institutions can leverage on more effective planning and implementation strategies for case method coaching for problem-based learning to enhance student engagement and learning performance.

## Literature review and hypotheses development

### *Student engagement*

Hu and Kuh (2002, p. 555) defined engagement as "the quality of effort students themselves devote to educationally purposeful activities that contribute directly to desired outcomes".

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According to Krause and Coates (2008), student engagement refers to “focuses on the extent to which students are engaging in activities that higher education research has shown to be linked with high-quality learning outcomes”. Student engagement is an important factor in the quality of education for students (Robinson and Hullinger, 2008). The effective strategies to engage students in the learning process are to incorporate active learning, such as case method, into the curriculum (Samson, 2015). In education context, student engagement involves in teaching, mentoring and coaching (Culpeper and Qian, 2020; Kutsyuruba and Godden, 2019).

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#### *Learning assessments*

In educational coaching and problem-based learning, the alignment between learning activities and assessments is important to achieve desired learning outcomes (Wang *et al.*, 2016b). Student perception of learning gains related to core course objectives and relate to assessments. The application of case method enhances students’ ability to synthesize complex analytical exam questions related to the real-world issues linked with a business topic (Bonney, 2015).

Reeves (2011) found that the case method enables students to apply theory to real-life case scenarios and thus make for more meaningful and valuable marketing recommendations in their assessments. His study further concluded that the case method facilitates students’ engagement with the assessed task and improves learning performance through achievement of higher grades. Kulasegaram and Rangachari (2018) asserted that assessments from problem cases through case method have provided students with better skills in identification of gaps and achieving learning goals, compared to other pedagogical approaches such as role-plays or simulations. The following hypothesis will be tested in this respect:

H1. Learning assessments positively influence student engagement.

#### *Analytical skills*

The case method coaching facilitates the development of analytical skills (Herreid *et al.*, 2011). Dori and Herscovitz (1998) asserted the students have the ability to improve synthesize complex analytical questions related to the real-world issues. Case method for problem-based learning provides a platform to integrate real-world experiences into classroom setting and provides mechanism to engage students in an authentic learning process (Samson, 2015). Through case method learning, students could develop more effective problem solving skills and critical thinking skills (McLean, 2016; Hong and Yu, 2017). Case method is more effective than other pedagogical approaches in facilitating complex information to learn theory, application of theory and its policy implications (Volpe, 2015).

McCormick *et al.* (2015) stressed that educators should explore on study techniques and methods to effectively engaging all students in the development of critical thinking skills to improve on the cognitive processes in learning. Case method learning promotes the development of the higher levels of Bloom’s taxonomy of cognitive learning comprising analysis, evaluation and application that is directed more towards problem-based learning (Anderson and Krathwohl, 2000). Case method developed students’ tacit and explicit knowledge, and higher order skills (Volpe, 2015). The acquired knowledge and skills through case method coaching help students to apply their analytical abilities to the challenging business situation(s). Samson (2015) found that analytical skills in the perspective of critical thinking skills effectively engaged students in learning. Therefore, the following hypothesis is formed:

H2. Analytical skills positively influence student engagement.

### *Interpersonal skills*

According to [Bonney \(2015\)](#), case method is more effective than classroom discussions and textbook reading in enhancing written and oral communication skills. Past literature (i.e. [Flynn and Klein, 2001](#); [Tomey, 2003](#)) have highlighted that student perceptions of learning increased through group discussion activities related to case study tasks, and this subsequently improved student engagement. Case method in problem-based learning encouraged interactions and stronger relationships between students and teachers, as well as between students themselves, and resulted in improved student engagement ([Taylor and Parsons, 2011](#)).

A study conducted by [Nkhoma et al. \(2017b\)](#) on the undergraduate students within the similar course shown that case discussion with peers and lecturers in class improved emotional engagement, which lead to positive influenced on group interaction and individual learning performance. Case method approach through collaborative learning encouraged teamwork amongst students and improved communication skills ([Borhan, 2012](#)). Thus, the following hypothesis will be tested:

*H3.* Interpersonal skills positively influence student engagement.

### *Interdisciplinary learning*

Case method facilitates interdisciplinary learning and can be used to blend and enrich learner's knowledge from different disciplines. [Repko et al. \(2013\)](#) asserted that there are limitations in pedagogical approaches, which challenge students to demonstrate interdisciplinary understanding by integrating multiple sources of knowledge, methods and perspectives, from different disciplines to understand and analyse a problem solution or a learning outcome. Hence, interdisciplinary learning improved critical thinking competency of the students.

[Berasategi et al. \(2020\)](#) found that case study methodology encouraged interdisciplinary learning that positively impacts learners' engagement. They further stressed that collaborative work, motivation, participation and interdisciplinary thinking were the acquired interdisciplinary learning skills. Case method facilitates advance deeper learning and contributes to broader impact of cases when applied in an interdisciplinary setting ([Zimmerman et al., 2011](#)). Therefore, the following hypothesis is developed:

*H4.* Interdisciplinary learning positively influences student engagement.

### *Learning performance*

[Bonney \(2015\)](#) asserts that case method is more effective than other methods of content delivery at increasing students' performance in examination. In higher education, student engagement is an important factor to achieve learning outcomes ([Boulton et al., 2019](#)). [Su et al. \(2017\)](#) reported that effective students' engagement enhances their participative behaviours, which are related to students' learning achievements and students could obtain better understanding through the learning process.

In a study conducted by [Nkhoma et al. \(2017b\)](#), on three cohorts of undergraduate students within the same course, reported that case discussion between peers and with the lecturers improved emotional engagement and contributed to positive group interaction and individual learning performance.

*H5.* Student engagement positively influences learning performance.

### *Conceptual framework*

The literature review has discussed and identified the relationships between the variables for this study. Hypotheses are developed to examine the four independent variables of learning

assessments, analytical skills, interpersonal skills and interdisciplinary learning towards student engagement. In addition, student engagement is correlated to learning performance. The conceptual framework is shown in [Figure 1](#).

## Research methodology

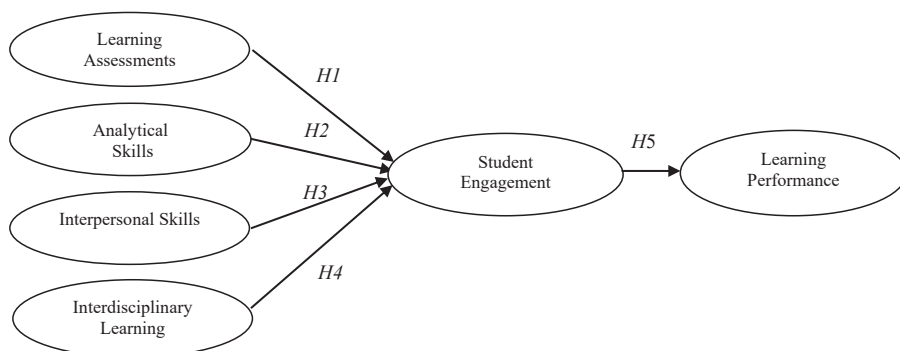
### *Sample and data collection*

Data for this study were collected from 410 undergraduate business students in the five top private universities in Malaysia. The students were aged between 18 and 30. To enable perform of structural equation modelling (SEM) analysis, a minimum sample size of 150 is required for structural model with six constructs ([Hair et al., 2010](#)). Hence, we have decided to have 410 samples to meet the requirement for SEM analysis and to achieve generalization of the results. Non-probability convenience sampling method was used to select the samples. Convenience sampling can facilitate the availability and easy access of targeted respondents for data collection. The prospective respondents who presence at campus of the selected five private universities in Malaysia were approached to fill up the survey questionnaires form and collected back once they were filled. The survey was conducted between September and October 2020. Prior to distribution of the survey questionnaires, pre-qualifying question was asked to check if respondents have experienced before case method coaching for problem-based learning in the courses taken at their respective university in order to verify the respondents' eligibility. A total of 440 questionnaires were circulated, and response rate was 93% with a total 410 questionnaires were completed and returned by the respondents.

### *Measures*

The survey instrument consisted of questions required participants to provide demographic information and their experiences in applying case method coaching for problem-based learning in the context of learning assessments, analytical skills, interpersonal skills and interdisciplinary learning and their achievement in student engagement and learning performance.

To assure the reliability and validity of the measurements for each construct, the scales from previous research were referred. We used 25-item scale measurement with Likert scale of six-point ranging from 1 (strongly disagree) to 6 (strongly agree) for the measurement items. Six-point Likert scale was deemed appropriate to provide more accurate responses compared to odd number frequency scale which responses can be at the neutral point. Pilot study was conducted on 30 undergraduate business students in the chosen five private



**Figure 1.**  
Conceptual framework



universities in Malaysia to ensure respondent's comprehension of the questionnaires. The measurement items and its sources are shown in [Table 1](#).

#### *Validity and reliability assessment*

The pilot test comprising the exploratory factor analysis (EFA) to assess the validity of the measures and eliminate items with factor loading  $< 0.3$ . EFA is examined by using maximum likelihood extraction and Promax rotation, the results have revealed six dimensions with KMO score of 0.875, which was above the accepted limit of 0.6 ([Pallant, 2007](#)). Bartlett's Test of Sphericity value was achieved at  $p = 0.000$  ( $p < 0.05$ ), which is required to be significant ([Pallant, 2007](#)). The factor loading results for the 25 items is above 0.3 which indicated that all items in the questionnaire proven to have well construct validity and shall be retained for further analysis.

The values of Cronbach's alpha (CA) ranged from 0.800 to 0.894, which exceeded the threshold level of 0.7 ([Pallant, 2007](#)). Hence, convergent validity was achieved. The composite reliability (CR) values were above the cut-off value of 0.6 ([Bagozzi and Yi, 1988](#)). The average variance explained (AVE) values were also above the accepted limit of 0.5 ([Fornell and Larcker, 1981](#)). The confirmatory factor analysis (CFA), CA, CR and AVE results are indicated in [Table 1](#).

## Results

#### *Demographic profile of the respondents*

[Table 2](#) presents the demographics profile of the respondents. The total number of respondents was 410 business students from five private universities in Malaysia comprising of male students (52%) and female students (48%). The majority of the respondents age group fell between 18 and 21 years of age (42%), followed by age group between 21 and 25 years (47%), and between 26 and 30 years (11%). The local students' respondents comprise of 65% higher than the international students of 35%. As for the frequency of exposure to case method coaching within a week, majority 41% within 4–6 times, followed by 39% within 1–3 times, 18% within 7–9 times and 2% for 10 times and above.

#### *Model compatibility testing*

The structural model has achieved a good fit as shown in [Table 3](#). The *chi-square* value is 580.257, which are acceptable values greater than 0.05 ([Barrett, 2007](#)). In our model, the ratio of  $\chi^2/df$  was 2.198, which is lower than the value 3.0, as suggested by [Byrne \(2010\)](#). Incremental fit values were higher than 0.9, with IFI of 0.938, CFI of 0.938 and TLI of 0.929. RMSEA is 0.054, which was lower than the benchmark level of 0.08 ([Browne and Cudeck, 1993](#)).

As for the normality assessment, the values of kurtosis were between  $-3.0$  and  $3.0$  and skewness between  $-1.0$  and  $1.0$  which have proven that the data is normally distributed. The estimated path coefficients were formed and the research hypotheses were tested. The hypotheses testing results shown that all the hypotheses ([H1–H5](#)) in this study are accepted.

#### *Model causality testing*

[Figure 2](#) illustrates the final structural model. The findings concluded that all five hypotheses [H1](#), [H2](#), [H3](#), [H4](#) and [H5](#) were supported.

Hypothesis [H1](#) indicates the positive relationship between learning assessments and student engagement *and* is significant at  $\beta = 0.340$  and  $p < 0.001$ . [H2](#) is significant with  $\beta = 0.315$ ,  $p < 0.001$ , indicating that analytical skills will positively influence student engagement. The third hypothesis, [H3](#), yields significant result confirming the interpersonal

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Construct	Item	Measurement	Source	Factor loading	CA, CR, AVE
Learning assessments	LA1	Synthesize complex analytical exam questions about the real-world issues associated with a business topic	Bonney (2015), Taras (2010), Iliya (2014)	0.693	0.830 (CA)
	LA2	Link theories and practical in assessment		0.767	0.559 (AVE)
	LA3	Improvement in summative assessment		0.836	0.834 (CR)
	LA4	Improvement in formative assessment		0.684	
Analytical skills	AS1	Promotes group discussion and solving of complex problems	Alsaman (2017), Assaly and Smadi (2017), Bonney (2015)	0.691	0.859 (CA)
	AS2	Facilitates development of the higher levels of Bloom's taxonomy of cognitive learning		0.772	0.551 (AVE)
	AS3	Emphasizes on analysis, evaluation, and application		0.775	0.859 (CR)
	AS4	Grasps the practical application of core course concepts		0.797	
Interpersonal skills	IS1	Promotes critical thinking	Alsaman (2017), Naude and Derera (2014)	0.669	
	IS2	Promotes development of business communication skills		0.783	0.894 (CA)
	IS3	Promotes leadership skills		0.842	0.683 (AVE)
	IS4	Develops self-confidence		0.810	0.896 (CR)
Interdisciplinary learning	IL1	View an issue from multiple perspectives involving different disciplinary	Klaassen (2018), Lattuca <i>et al.</i> (2012)	0.671	0.800 (CA)
	IL2	Transfer what have learnt into different disciplinary		0.724	0.503 (AVE)
	IL3	Development of new knowledge comprising different disciplinary		0.752	0.801 (CR)
	IL4	Given knowledge from different disciplinary, helps in solving a problem		0.686	
Student engagement	SE1	Creates long-term engagement of educator-learner experience	Bonney (2015), Fredricks and McColskey (2012)	0.722	0.889 (CA)
	SE2	Fosters educator-learner relationship		0.827	0.670 (AVE)
	SE3	Promotes engagement between students		0.877	0.890 (CR)
	SE4	Self-regulated learning		0.840	
Learning performance	LP1	Achievement of good assessment results	Nkhoma <i>et al.</i> (2017b), Muda <i>et al.</i> (2017)	0.735	0.823 (CA)
	LP2	Improved overall understanding and knowledge on the subject/module		0.729	0.539 (AVE)
	LP3	Acquired the skills needed to achieve good learning performance		0.736	0.824 (CR)
	LP4	Overall, achieve good learning performance		0.736	

**Table 1.**  
CFA, CA, CR and AVE results



Demographics	Percentage	Perspectives on case method coaching
<i>Gender</i>		
Male	52%	
Female	48%	
Total	100%	
<i>Age</i>		
18–20	42%	
21–25	47%	
26–30	11%	
Total	100%	
<i>Type of student</i>		
Domestic	65%	
International	35%	
Total	100%	
<i>Frequency of exposure to case method coaching within a week</i>		
1–3 times	39%	
4–6 times	41%	
7–9 times	18%	
10 times and above	2%	
Total	100%	

**Table 2.**  
Demographic  
characteristics of the  
respondents

Model fit indices	
Chi-square	580.257
Degree of freedom	264
Probability level	0.000
RMSEA	0.054
IFI	0.938
CFI	0.938
TLI	0.929
ChiSq/df	2.198

Hypothesized relationships	Estimate	<i>p</i> values	Result
H1 LA → SE	0.340	***	Supported
H2 AS → SE	0.315	***	Supported
H3 IS → SE	0.288	***	Supported
H4 IL → SE	0.167	0.011	Supported
H5 SE → LP	0.512	***	Supported

**Note(s):** \*\*\**p* < 0.001

**Table 3.**  
Structure model  
assessment and  
hypothesis testing

skills had positive influence on student engagement with a value of  $\beta = 0.288, p < 0.001$ . H4 is significant with  $\beta = 0.167, p < 0.05$ , reflecting interdisciplinary learning had significant positive effect on student engagement. Finally, H5 is also significant at  $\beta = 0.512, p < 0.001$ , indicating student engagement had direct positive effect on learning performance.

## Discussion

The findings validated the conceptual framework and theorized the antecedents of problem-based learning for business education. Furthermore, it also confirmed the role of student

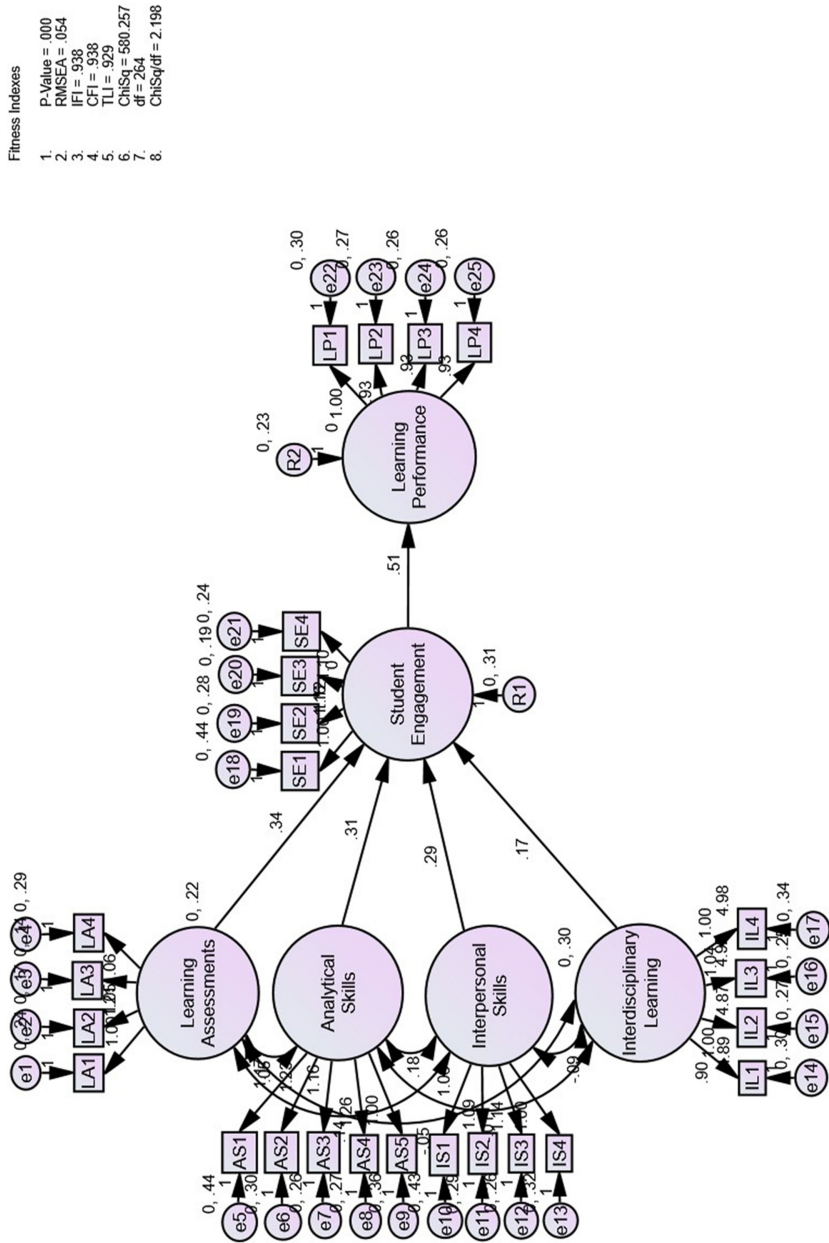


Figure 2. Structural model

engagement as the mediator for problem-based learning and the learning performance empirically. Overall, the business students have a positive perception of the case method coaching approach for problem-based learning as an effective learning tool in the classroom. The case method coaching can garner students' interest in learning, improve engagement with peers and educators, and enhance their learning performance. Learning assessments had the highest correlation coefficient value on student engagement, compared to analytical skills, interpersonal skills and interdisciplinary learning constructs. Hence, our findings proposed that case method coaching for problem-based learning should focus more on linking theories and practical assessments to promote higher-order of Bloom's taxonomy involving critical thinking and evaluative judgement. For effective learning assessment implementation, the coaching approach can be directed to cover both summative and formative assessments to drive higher academic achievements.

The findings also reveal that business students perceived themselves to have developed analytical skills such as problem-solving, critical thinking, decision-making, acquired higher levels of Bloom's and logical reasoning. The educator should give more attention to personalized or one-to-one coaching to the student to stimulate the set of analytical skills (Wang *et al.*, 2016a). Interpersonal skills in case method coaching facilitate the development of business communication skills, leadership skills and self-confidence. Interpersonal skills range from communication and listening to attitude and deportment. Interpersonal skills assist learners to interact with others effectively in case method learning activities. These interpersonal skills can include skills like negotiating, problem-solving and knowledge-sharing, which are the major requirements of many occupations in the job market. In addition, it can include appreciation expression skills, dispute resolution skills and listening skills. Our findings have supported previous studies by Nkhoma *et al.* (2017b) and Borhan (2012) on the interpersonal skills, which positively influenced student engagement.

Case method coaching for business students has enhanced the student engagement, which lead them towards improved learning performance. Strong student engagement between their peers and with educator, as coach, is crucial to motivate them to achieve good learning performance. In fostering student engagement, emphasize can be given on harmonizing the coaching style of educators and the learning style of students through cooperative learning (Nepal and Rogerson, 2020). Learners should also set their learning goals clearly and make it clear to the instructor. With that, more focussed directive strategies can be undertaken by the educator to engage the student to achieve their respective learning goals and learning performance.

## Conclusion

This study provides insight into business students' perspectives towards case method coaching for problem-based learning in the aspect of learning assessments, analytical skills, interpersonal skills and interdisciplinary learning, in influencing student engagement and learning performance in the Malaysian private higher education context. This implies that the impact of the elements of case method coaching in enhancing the learning performance through student engagement. A high level of learning performance could be achieved when the students are having closer engagement. Existing studies (Krain, 2010; Anderson and Schiano, 2014; Esteban and Cañado, 2004) showed that case method coaching is effective to develop problem-solving skills. However, this study broadened to explicate the need for closer student engagement in case method coaching to improve learning performance.

The present study results show that interdisciplinary learning in the context of the case method for problem-based learning is still not adequately covered. Hence, interdisciplinary learning in case method coaching for problem-based learning can be enhanced through emphasize on the development and transfer of new knowledge comprising different

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disciplines. The educator can blend and link the case analysis involving different disciplines to provide more valuable learning contributions and outcomes the business students. The interdisciplinary learning emphasize can also lead to the development of research involving different disciplinary. In summary, we propose that business educators in higher education institutions should focus more attention to improve on students' learning experience and skills in the aspect of learning assessments, analytical skills, interpersonal skills and interdisciplinary learning to draw better achievement outcomes in learners' engagement and learning performance.

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#### *Theoretical implications*

This study provides a theoretical explanation of the case method coaching applied for problem-based learning. First, we developed a new integrative framework of case method coaching and problem-based learning needed for improving student engagement and learning performance. Second, the antecedents of effective case method coaching were confirmed, i.e. learning assessments, analytical skills, interpersonal skills and interdisciplinary learning. Third, this study confirmed the mediating role of student engagement in bridging the linkage between the antecedents and learning performance. The extant literature has shown that educators are practicing problem-based learning and familiar with learning tools such as case studies, role-plays and simulations but unable to measure the effectiveness of these tools (Kek and Huijser, 2011; Bonney, 2015; Nkhoma *et al.*, 2017a). Hence, this present study provides the theoretical understanding to measure case method coaching and problem-based learning within the context of business education.

#### *Practical implications*

Through case method coaching for problem-based learning, business students are exposed to cooperative learning and active engagement that developed their employability skills (Naude and Derera, 2014). Despite the increasing demand by employers on graduates with relevant competencies and skills in line with contemporary industry needs, business students who have gone through the case method for problem-based learning are more equipped with the important "hard" skills (i.e. learning assessments, analytical skills and interdisciplinary learning) and "soft" skills (i.e. interpersonal skills). These acquired "hard" and "soft" skills empowering learners, and transferable skills developed for lifelong learning development process and application in future employment contexts (Heaviside *et al.*, 2018). For example, interdisciplinary learning experiences acquired will help students to solve real world business problem from multiple perspectives, as well as to prepare them for multitasking and creativity focus. The effectiveness adoption of case method coaching for problem-based learning will bridge the gap between education and employment, as business students will be more well prepared and capable to face the dynamic contemporary workplace environment. Hence, business students are expected to be more confident in solving workplace-based problems, demonstrate positive attitudes and prepare to overcome any challenges (Li *et al.*, 2020).

The effectiveness of student engagement for coaching in business education is a collaborative relationship between educator and student, as well as between student and their peers. The understanding of student's needs, support and encouragement are crucial to build better engagement between educator and student. Furthermore, higher education institutions should ensure that the adequate resources and more qualified and trained business educators as coaches are allocated to successfully implement case method coaching for problem-based learning to achieve the desired goals. As advocated by Trejo-Pech and White (2017), the more resources and effort in case method coaching spent by educators on the students, the higher level of positive outcomes in students' acceptance and learning on the cases. For higher

education institutions that are newly embarking on case method coaching as complementary to their existing teaching and learning approaches, this would involve curricular changes which require the culture of acceptance and motivation by the educators (Orr and Sonnadara, 2019). Therefore, higher education institutions can leverage effective planning and implementation strategies for case method coaching for problem-based learning through more effective coaching strategies, enhance education curricula, allocation of adequate resources and qualified and trained business educators as coaches.

### Limitations and future research

The present study has several limitations that provide opportunities for future studies. First, this study comprised a sample of undergraduate business students in the private higher education institutions in Malaysia. Future studies should consider different samples from different countries, different education fields, or public universities as comparative studies. Second, the investigation was only observed based on the business students' perspectives through the influence of learning assessments, analytical skills, interpersonal skills and interdisciplinary learning constructs on student engagement and subsequently, learning performance. Further explorations should consider other perspectives such as motivation (Berasategi *et al.*, 2020) and interactivity (Nkhoma *et al.*, 2017b), and other mediating constructs involving learners' attitudes. Finally, future studies could explore a qualitative approach to have a more in-depth understanding of the effectiveness of case method coaching for problem-based learning amongst educators and learners in the higher education context.

### References

- Allen, R. and Rooney, P. (1998), "Designing a problem-based learning environment for ESL students in business communication", *Business Communication Quarterly*, Vol. 61 No. 2, pp. 48-56.
- Almohaini, A., Choukir, J. and Alkhorayef, A. (2017), "Case study, simulation and management games: use, benefits and barriers in undergraduate business school program (CEAS-IMSIU)", *International Business Research*, Vol. 10 No. 1, pp. 129-142.
- Alsaman, A.M. (2017), "The effectiveness of using case-based learning approach: student perceptions and assessment tools used in accounting case study course", *Australian Journal of Basic and Applied Sciences*, Vol. 11 No. 10, pp. 26-40.
- Anderson, L.W. and Krathwohl, D. (2000), *A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives*, Complete Edition, Longman Publishing Group, White Plains, NY.
- Anderson, E. and Schiano, B. (2014), *Teaching with Cases: A Practical Guide*, Harvard Business School Publishing, Boston, MA.
- Assaly, I.R. and Smadi, O.M. (2017), "Using bloom's taxonomy to evaluate the cognitive levels of master class textbook's questions", *English Language Teaching*, Vol. 8 No. 5, pp. 100-110.
- Avolio, B.E., Benzaquen, J.B. and Pretell, C. (2019), "Global challenges for business education and the new educational agenda: graduate attributes and teaching methods", *E-Journal of Business Education and Scholarship of Teaching*, Vol. 13 No. 2, pp. 80-99.
- Bagozzi, R. and Yi, Y. (1988), "On the evaluation of structural equation models", *Journal of the Academy of Marketing Sciences*, Vol. 16 No. 1, pp. 74-94.
- Barrett, P. (2007), "Structural equation modelling: adjudging model fit", *Personality and Individual Differences*, Vol. 42 No. 5, pp. 815-824.
- Bennett, A. (2004), "Case study methods: design, use, and comparative advantages", in Sprinz, D.F. and Wolinsky, Y. (Eds), *Model, Numbers and Cases: Methods for Studying International Relations*, The University of Michigan Press, Ann Arbor, pp. 19-55.

- 
- Berasategi, N., Aróstegui, I., Jaureguizar, J., Aizpurua, A., Guerra, N. and Arribillaga-Iriarte, A. (2020), "Interdisciplinary learning at university: assessment of an interdisciplinary experience based on the case study methodology", *Sustainability*, Vol. 12, p. 7732.
- Bonney, K.M. (2015), "Case study teaching method improves student performance and perceptions of learning gains", *Journal of Microbiology and Biology Education*, Vol. 16 No. 1, pp. 21-28.
- Borhan, M.T. (2012), "Problem based learning (PBL) in Malaysia higher education: a review of research on learners' experience and issues of implementations", *ASEAN Journal of Engineering Education*, Vol. 1 No. 1, pp. 48-53.
- Boulton, C.A., Hughes, E., Kent, C., Smith, J.R. and Williams, H.T.P. (2019), "Student engagement and wellbeing over time at a higher education institution", *PLoS One*, Vol. 14 No. 11, e0225770.
- Brinkley, M. and le Roux, I. (2018), "Coaching as a support function for potential entrepreneurs", *The Southern African Journal of Entrepreneurship and Small Business Management*, Vol. 10 No. 1, pp. 1-12.
- Browne, M.W. and Cudeck, R. (1993), "Alternative ways of assessing model fit", in Cheung, C.M.K., Lee, M.K.O. and Rabjohn, N. (Eds), *The Impact of Electronic Word-Of Mouth: the Adoption of Online Opinions in Online Customer Communities*, Internet Research, Vol. 18 No. 3, pp. 229-247.
- Byrne, B.M. (2010), *Structural Equation Modeling with AMOS*, 2nd ed., Routledge, New York.
- Culpeper, J. and Qian, K. (2020), "Communicative styles, rapport, and student engagement: an online peer mentoring scheme", *Applied Linguistics*, Vol. 41 No. 5, pp. 756-786.
- Dori, Y.J. and Herscovitz, O. (1998), "Question-posing capability as an alternative evaluation method: analysis of an environmental case study", *Journal of College Science Teachers*, Vol. 36 No. 4, pp. 411-430.
- Esteban, A.A. and Cañado, M.L.P. (2004), "Making the case method work in teaching Business English: a case study", *English for Specific Purposes*, Vol. 23 No. 2, pp. 137-161.
- Flynn, A.E. and Klein, J.D. (2001), "The influence of discussion groups in a case-based learning environment", *Educational Technology Research and Development*, Vol. 49 No. 3, pp. 71-86.
- Fornell, C. and Larcker, D.F. (1981), "Evaluating structural equation models with unobservable variables and measurement error", *Journal of Marketing Research*, Vol. 18 No. 1, pp. 39-50.
- Fredricks, J.A. and McColskey, W. (2012), "The measurement of student engagement: a comparative analysis of various methods and student self-report instruments", in Christenson, S.L., Reschly, A.L. and Wylie, C. (Eds), *Handbook of Research on Student Engagement*, Springer Science + Business Media, New York, NY, pp. 763-782.
- Geissler, G.L., Edison, S.W. and Wayland, J.P. (2012), "Improving students' critical thinking, creativity, and communication skills", *Journal of Instructional Pedagogies*, Vol. 8 No. 2, pp. 1-11.
- Hair, J.F., Black, W.C., Babin, B.J. and Anderson, R.E. (2010), *Multivariate Data Analysis: A Global Perspective*, Pearson Education, NJ, NJ.
- Harman, T., Bertrand, B., Greer, A., Pettus, A., Jennings, J., Wall-Bassett, E. and Babatunde, O.T. (2015), "Case-based learning facilitates critical thinking in undergraduate nutrition education: students describe the big picture", *Journal of the Academy of Nutrition and Dietetics*, Vol. 115 No. 3, pp. 378-388.
- Heaviside, H.J., Manley, A.J. and Hurdson, J. (2018), "Bridging the gap between education and employment: a case study of problem-based learning implementation in Postgraduate Sport and Exercise Psychology", *Higher Education Pedagogies*, Vol. 3 No. 1, pp. 463-477.
- Herreid, C.F., Schiller, N.A., Herreid, K.F. and Wright, C. (2011), "In case you are interested: results of a survey of case study teachers", *Journal of College Science Teachers*, Vol. 40 No. 4, pp. 76-80.
- Hong, S. and Yu, P. (2017), "Comparison of the effectiveness of two styles of case based learning implemented in lectures for developing nursing students' critical thinking ability: a randomized controlled trial", *International Journal of Nursing Studies*, Vol. 68 No. 4, pp. 16-24.

- Hu, S. and Kuh, G. (2002), "Being (dis)engaged in educationally purposeful activities: the influences of student and institutional characteristics", *Research in Higher Education*, Vol. 43 No. 5, pp. 555-575.
- Iliya, A. (2014), "Formative and summative assessment in educational enterprise", *Journal of Education and Practice*, Vol. 5 No. 20, pp. 111-117.
- Kek, M.Y.C.A. and Huijser, H. (2011), "The power of problem-based learning in developing critical thinking skills: preparing students for tomorrow's digital futures in today's classrooms", *Higher Education Research and Development*, Vol. 30 No. 3, pp. 317-329.
- Klaassen, R. (2018), "Interdisciplinary education: a case study", *European Journal of Engineering Education*, Vol. 43 No. 6, pp. 842-859.
- Krain, M. (2010), "The effects of different types of case learning on student engagement", *International Studies Perspectives*, Vol. 11 No. 3, pp. 290-307.
- Krause, K.L. and Coates, H. (2008), "Students' engagement in first year university", *Assessment and Evaluation in Higher Education*, Vol. 33 No. 5, pp. 493-505.
- Kulasegaram, K. and Rangachari, P.K. (2018), "Beyond 'formative': assessments to enrich student learning", *Advances in Physiology Education*, Vol. 42 No. 1, pp. 5-14.
- Kutsyuruba, B. and Godden, L. (2019), "The role of mentorship and coaching in supporting the holistic well-being and ongoing development of educators", *International Journal of Mentoring and Coaching in Education*, Vol. 3 No. 8, pp. 229-234.
- Lattuca, L.R., Knight, D.B. and Bergom, I.M. (2012), "Developing a measure of interdisciplinary competence for engineers", *Paper Presented at the ASEE Annual Conference and Exposition*, San Antonio, Texas, June 2012, available at: <https://peer.asee.org/developing-a-measure-of-interdisciplinary-competence-for-engineers> (accessed 20 February 2021).
- Li, K., Peng, M.Y.P., Du, Z., Li, J., Yen, K.T. and Yu, T. (2020), "Do specific pedagogies and problem-based teaching improve student employability? A cross-sectional survey of college students", *Frontiers in Psychology*, Vol. 11, p. 1099.
- Lovell, B. (2018), "What do we know about coaching in medical education? A literature review", *Medical Education*, Vol. 52 No. 4, pp. 376-390.
- McCormick, J.J., Clark, L.M. and Raines, J.M. (2015), "Engaging students in critical thinking and problem solving: a brief review of the literature", *Journal of Studies in Education*, Vol. 5 No. 4, pp. 100-113.
- McLean, S.F. (2016), "Case-based learning and its application in medical and health-care fields: a review of worldwide literature", *Journal of Medical Education and Curricular Development*, Vol. 3 No. 4, pp. 39-49.
- Mills, J.E. and Treagust, D. (2003), "Engineering education, is problem-based or project-based learning the answer", *Australasian Journal of Engineering Education*, Vol. 3 No. 2, pp. 2-16.
- Muda, H., Ali, M.H. and Jusoh, M. (2017), "Measuring teaching and learning performance in higher education", *International Journal of Education*, Vol. 2 No. 6, pp. 57-70.
- Naude, M. and Derera, E. (2014), "Using the case study method to enhance the learning skills of supply chain management students", *Industry and Higher Education*, Vol. 28 No. 5, pp. 1-9.
- Nepal, R. and Rogerson, A.M. (2020), "From theory to practice of promoting student engagement in business and law-related disciplines: the case of undergraduate economics education", *Education Science*, Vol. 10 No. 8, p. 205.
- Nkhoma, M., Lam, T., Sriratanaviriyakul, N., Richardson, J., Kam, B. and Lau, K. (2017a), "Unpacking the revised Bloom's taxonomy: developing case-based learning activities", *Education + Training*, Vol. 59 No. 3, pp. 250-264.
- Nkhoma, M.Z., Sriratanaviriyakul, N. and Huy, L.Q. (2017b), "Using case method to enrich students' learning outcomes", *Active Learning in Higher Education*, Vol. 18 No. 1, pp. 37-50.



- 
- Orr, C.J. and Sonnadara, R.R. (2019), "Coaching by design: exploring a new approach to faculty development in a competency-based medical education curriculum", *Advances in Medical Education and Practice*, Vol. 10 No. 1, pp. 229-244.
- Pallant, J. (2007), *SPSS Survival Manual*, Open University Press, Maidenhead, Berkshire.
- Pilz, M. and Zenner, L. (2018), "Using case studies in business education to promote networked thinking: findings of an intervention study", *Teaching in Higher Education*, Vol. 23 No. 3, pp. 325-342.
- Raza, S.A., Qazi, W. and Umer, B. (2019), "Examining the impact of case-based learning on student engagement, learning motivation and learning performance among university students", *Journal of Applied Research in Higher Education*, Vol. 12 No. 3, pp. 517-533.
- Reed, M. and Brunson, R.R. (2018), "Exploration of the efficacy of the case method of teaching", *The CASE Journal*, Vol. 14 No. 3, pp. 362-371.
- Reeves, P. (2011), "The extended case study method of assessment in marketing education", available at: [http://usir.salford.ac.uk/id/eprint/17001/1/paper\\_39.pdf](http://usir.salford.ac.uk/id/eprint/17001/1/paper_39.pdf) (accessed 20 February 2021).
- Repko, A.F., Szostak, R. and Buchberger, M.P. (2013), *Introduction to Interdisciplinary Studies*, Sage, Thousand Oaks, CA.
- Rezaee, R. and Mosalanejad, L. (2015), "The effects of case-based team learning on students' learning, self regulation and self direction", *Global Journal of Health Science*, Vol. 7 No. 4, pp. 295-306.
- Robinson, C. and Hullinger, H. (2008), "New benchmarks in higher education: student engagement in online learning", *Journal of Education for Business*, Vol. 84 No. 2, pp. 101-109.
- Samson, P.L. (2015), "Fostering student engagement: creative problem-solving in small group facilitations", available at: <http://celt.uwindsor.ca/index.php/CELT/article/view/4227> (accessed 1 March 2021).
- Santos, J.A.D. and Gomide, T.R. (2013), "Merging the case method and simulation in management education: is it possible?", *Journal of Business and Economics*, Vol. 4 No. 8, pp. 737-746.
- Sexton, R. and Garner, B. (2020), "Student perspectives of effective pedagogical strategies for teaching ethics", *Marketing Education Review*, Vol. 30 No. 2, pp. 132-137.
- Su, Y.S., Ding, T.J. and Lai, C.F. (2017), "Analysis of students engagement and learning performance in a social community supported computer programming course", *Eurasia Journal of Mathematics, Science and Technology Education*, Vol. 13 No. 9, pp. 6189-6201.
- Taras, M. (2010), "Assessment for learning: assessing the theory and evidence", *Procedia Social and Behavioral Sciences*, Vol. 2 No. 2, pp. 3015-3022.
- Taylor, L. and Parsons, J. (2011), "Improving student engagement", *Current Issues in Education*, Vol. 14 No. 1, pp. 1-32.
- Thistlethwaite, J.E., Davies, D., Ekeocha, S., Kidd, J.M., MacDougall, C., Matthews, P., Purkis, J. and Clay, D. (2012), "The effectiveness of case based learning in health professional education. A BEME systematic review: BEME Guide No. 23", *Medical Teacher*, Vol. 34 No. 6, pp. e421-e444.
- Tomey, A.M. (2003), "Learning with cases", *Journal of Continuing Education in Nursing*, Vol. 34 No. 1, pp. 34-38.
- Trejo-Pech, C. and White, S. (2017), "The use of case studies in undergraduate business administration", *Revista de Administração de Empresas*, Vol. 57 No. 4, pp. 342-356.
- Volpe, G. (2015), "Case teaching in economics: history, practice and evidence", *Cogent Economics and Finance*, Vol. 3 No. 1, p. 1120977.
- Wang, Q., Li, H. and Pang, W. (2016a), "From PBL tutoring to PBL coaching in undergraduate medical education: an interpretative phenomenological analysis study", *Medical Education Online*, Vol. 8 No. 21, p. 31973.
- Wang, Q., Li, H., Pang, W. and Su, Y.L. (2016b), "Developing an integrated framework of problem-based learning and coaching psychology for medical education: a participatory research", *BMC Medical Education*, Vol. 16 No. 2, pp. 1-14.

Yanovska, V., Baldzhy, M. and Fayvishenko, D. (2019), "Coaching as a leadership style and a business education model", *3rd International Conference on Social, Economic, and Academic Leadership*, Prague, Czech Republic, 23rd-24th March 2019, *Advances in Social Science, Education and Humanities Research*, Vol. 318, pp. 210-214.

Zimmerman, S.D., Lester Short, G.F. and Hendrix, E.M. (2011), "Impact of interdisciplinary learning on critical thinking using case study method in allied health care graduate students", *Journal Allied Health*, Vol. 40 No. 1, pp. 15-18.

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