An Exploratory Factor Analysis of Elicited Students' Salient Beliefs Toward Critical Reading

Nadia Anuar[1], Ahmad Mazli Muhammad[2], Zainudin Awang[3]

[1]Akademi Pengajian Bahasa, Universiti Teknologi MARA (UiTM) Shah Alam
nadiaanuar91@gmail.com
[2]Akademi Pengajian Bahasa, Universiti Teknologi MARA (UiTM) Shah Alam
a.mazli@uitm.edu.my
[3]Faculty of Business and Management, Universiti Sultan Zainal Abidin Terengganu
zainudinawang@unisza.edu.my

Abstract

Critical reading is a key aspiration in the Malaysian Education Blueprint (2015-2025) and is an essential skill that higher education students must acquire. However, an increased number of graduates was reported to demonstrate poor critical reading performance at the workplace. Thus, Theory of Planned Behaviour (TPB) was employed in this study to examine students' salient beliefs toward critical reading which encompass behavioural belief (advantages and disadvantages of critical reading), normative belief (identification of people who approve participating in critical reading), and control belief (difficulties in critical reading). A three-stage research design was employed. The first stage, elicitation study, was conducted as this stage has received minimum scholarly attention in the TPB literature and to ensure a more comprehensive analysis. The beliefs were analysed qualitatively, which was proceeded by expert panel review. Subsequently, exploratory factor analysis was conducted to determine the validity of the salient beliefs. Findings from the exploratory factor analysis and reliability analysis revealed that beliefs elicited from students in this first stage are appropriate and possess sufficient reliability and construct validity. The results of this study have not only identified more relevant factors that influence students' perception toward critical reading but also contributed to the critical reading and Theory of Planned Behaviour's literature.

Keywords: *reading, critical reading, salient belief, exploratory factor analysis, theory of planned behaviour*

Introduction

The Malaysian Education Blueprint 2015-2025 (Malaysia Ministry of Education, 2015) highlighted reports received from potential employers citing graduates possessing poor critical thinking skill which is viewed as essential in the 21st century globalised workplaces. Weak critical thinking skills are increasingly recognised as a serious global concern. Thus, the Malaysian Education Blueprint has incorporated critical thinking skill as an aspiration that undergraduates must master in their completion of higher education.

The emphasis of critical thinking by the government is supported by the shift in the importance of critical thinking skills in the global job market. In the Future of Jobs Report published by World Economic Forum (2018), critical thinking skill is a human skill that will not only retain its importance but also increase in value. The report also pointed out that this skill is an emerging skill that employers tend to search for across continents.

Being able to read critically is a subset of critical thinking, a skill that is highly sought after in the highly competitive job market. Critical reading is related to critical thinking, where reading is a process that

employs critical thinking skills (Douglas, 2010; Thistlethwaite, 1990). Wilson (2016) examined how teachers utilised scaffolding to improve students' critical thinking skills in understanding an issue from different perspectives and inferred that critical reading cannot be separated from critical thinking skills as they move as one entity.

Marin and Pava (2017) stressed that reading is an imperative process in encouraging critical thinking for language learning. Watson and Reissner (2014) stressed that critical reading is a pillar of students' education, especially in the 4th Industrial Revolution setting. They further reiterated that the ability to read critically is the basis of independent thinking and the creation of knowledge is necessary for the continuous improvement of professional and managerial practice. Therefore, students should be moulded as critical thinkers with critical reading skills since higher education often demands these skills.

Literature Review

Critical Reading

Reading, especially critical reading has always been viewed as a challenging skill by many ESL learners. The ability to read critically and funnel information is crucial for tertiary students. A student who possesses effective critical reading skills is able to go "beyond the information given by asking questions, making hypotheses, seeking evidence, and validating assumptions" (Marschall & Davis, 2015).

Critical reading differs from other forms of reading in that the reading act goes beyond the literal meaning by questioning the functions and purposes of the text (Fisher, 2001; Mclaughlin & Devoogd, 2004). In short, critical reading is to actually think about the subject, moving beyond what the text concluded to the point of how the author reached that conclusion and the degree to which that conclusion is accurate.

Critical reading is often viewed as a three-stage process that requires students to understand, question and evaluate reading materials (Kress, 2010; Sidhu et al., 2015). Nambiar (2007) and Phakiti and Li (2011) stressed that reading, understanding, and synthesising material from different references is necessary for academic reading. In understanding texts, readers need not only be able to identify key points but also understand the relationship between points and the relevance of the texts to their study.

One of the most challenging tasks that undergraduates face is to read academic texts (Fook & Sidhu, 2015; Kaur & Sidhu, 2014). These scholars have emphasised that Malaysian students have difficulties coping with academic reading, especially in translating their thoughts into their reading. Researchers and educators have claimed that Malaysian university students are not prepared to engage in demanding reading tasks required of them (Ahmad Mazli Muhammad, 2004; Kaur & Sidhu, 2014; Nambiar, 2007). Wallace (2003) and Anuar and Sidhu (2017) assert that despite the significance of critical reading in different areas of education, it is not taken as seriously as it should be which contribute to students becoming passive learners in which they are afraid to question and disagree to the ideas in the texts.

This situation is not ideal for students as academic reading requires students to read beyond the general comprehension. Academic reading necessitates critical reading skills such as synthesise, evaluate and question the information in the texts. In her anecdote, Crismore (2000) discussed her five-year experience teaching in a Malaysian university and deduced that many Malaysian tertiary students are ill-prepared in employing their reading skills, particularly when reading the information in their textbooks. However, these results were based upon data from 20 years ago whereby more current evidence is needed.

Koo (2003) elaborates that most Malaysian university students are afraid to practise critical reading due to several reasons. Several reasons were listed by Koo (2003) such as they are accustomed to conformity to power, are afraid of a loss of face should their views are found to be incorrect, and also fear of being different from the majority. However, it has to be highlighted that these claims were made based on anecdotal observations.

Mohd Zin, Wong, and Rafik-galea (2014) conducted a study to investigate the level of critical reading skills among Malaysian tertiary students. A reading comprehension test was administered to both low proficiency and high proficiency groups to determine the students' level of analytical and inference skills. The results portrayed that the students can understand the text but lack the ability to analyse and evaluate. Furthermore, participants' responses were analysed qualitatively, and the authors concluded that students have difficulties in analysing the writer's intention in the texts. This study proves that students are able to read superficially but not critically.

Norbaiyah Kadir et al., (2014) stressed that students would be able to analyse, synthesise and evaluate information in the text easily if they acquire critical reading skill from an earlier stage. This is supported by Benedict (2013) who lamented that many first-year students are not taught to read critically. Therefore, students are not adequately prepared to approach their reading with inquiries that explore underlying assumptions or intentions. Students must have the ability to challenge the writer's views and produce valid arguments and not be submissive in reading. Hence, possessing critical reading skills could assist students to become proficient readers as it enables them to be more analytical.

The literature accentuated that critical reading is a problem that requires further examination in order to produce graduates who are critical readers that possess critical thinking skills as stipulated in the Malaysia Education Blueprint 2015-2015. Therefore, this study needs to be carried out as there is minimal research that specifically examined Malaysian higher education students' critical reading skills.

Salient Beliefs in Theory of Planned Behaviour

According to Theory of Planned Behaviour, human action is guided by three kinds of considerations: beliefs about the likely outcomes of the behaviour and the evaluations of these outcomes (behavioural beliefs), beliefs about the normative expectations of others and motivation to comply with these expectations (normative beliefs), and beliefs about the presence of factors that may facilitate or impede the performance of the

behaviour and the perceived power of these factors (control beliefs). In their respective aggregates, behavioural beliefs produce a favourable or unfavourable attitude toward the behaviour; normative beliefs result in perceived social pressure or subjective norm; and control beliefs give rise to perceived behavioural control. In combination, attitude toward the behaviour, subjective norm, and perception of behavioural control lead to the formation of a behavioural intention (Ajzen, 1991, 2006).

Hence, it is essential that salient beliefs are measured in this study. A systematic review of the questionnaire development process in 10 TPB-studies by Oluka, Nie, and Sun (2014) highlighted that the exclusion of examining salient beliefs is an issue in the questionnaire development process, thus, reinforcing the need to elicit indirect beliefs according to the study's context. Darker, French, Longdon, Morris, and Eves (2007) pointed out that the elicitation of salient belief is often disregarded by many researchers despite its importance. Sutton et al., (2003) and Herath (2010) strongly recommend examining the salient beliefs as the elicitation study would enrich and improve the generalisability of the data.

Unlike most elicitation studies that prefer to employ an open-ended survey to elicit salient beliefs, Tan et al., (2015) utilised face-to-face interviews to identify salient beliefs that influence patients' intention to purchase medicine. The study reported that the beliefs extracted from the interview were significant and useful in providing a strong preliminary understanding of the use of Theory of Planned Behaviour in the study's context.

Miesen (2003) revealed that these salient beliefs are essential in determining literary intention and reading behaviour. The results from multiple regression analysis revealed that behavioural belief has the highest influence on intention through attitude while normative belief and control belief exert modest influence on intention through subjective norm and perceived behavioural control, respectively. Cheon, Lee, Crooks, and Song (2012) established that behavioural belief exerted a stronger influence alongside control belief. Normative belief was identified to be the weakest. Similarly, Flowers, Freeman, and Gladwell (2017) reported that behavioural belief exerted the highest influence compared to normative belief and control belief.

The relevant literature demonstrates evidence of the influence of these three salient beliefs. The review has highlighted a gap in the literature whereby minimal studies have elicited students' beliefs toward critical reading. Therefore, this study defines behavioural belief as the perceived consequence of critical reading (Ajzen, 2006; Francis et al., 2004). Normative belief is referred as the perception of significant others' preferences about whether the student should read critically (Ajzen, 2006; Francis et al., 2004). Control beliefs is defined in this study as the likelihood that a student possesses the resources and opportunities necessary to read critically (Ajzen, 2006; Francis et al., 2004).

Problem Statement

Students are often required to synthesise, evaluate, interpret, and selectively use the information in texts in a classroom and other formal settings. Hence, it is necessary for students, especially higher education students, to have a good grasp of analytical skills to enable them to evaluate and analyse information from texts that they read daily. However, research has consistently reported that one of the most challenging tasks that students face is to critically read academic texts. It is a difficult endeavour that students need to perform regularly. Students view reading as boring, difficult, and are often unable to make connections between what they read and what they know (Koo et al., 2012).

Literature and employers have reported that Malaysian university students are weak in their ability to think and read critically (Malaysia Education Blueprint 2015-2025; Mohd Zin, Wong, & Rafik-galea, 2014). A majority of reading researchers and educators have claimed that Malaysian university students are underestimate the skills needed for critical reading (Nambiar, 2007). Several researchers have also reported that higher education learners possess superficial critical ability that can be attributed to the didactic nature of the learning process (Ahmad Mazli Muhammad, 2007; Kaur & Sidhu, 2014; Koo et al., 2012). This situation does not bode well for students as students need to read beyond general comprehension for educational purposes and for the workplace.

Therefore, this study aims to explore and determine the students' salient beliefs toward critical reading in order to gain a more detailed understanding of the factors that influence students' critical reading performance. The specific objectives of this are two-fold which are as follows:

1) To elicit students' behavioural belief, normative belief, and control belief toward critical reading.
2) To ascertain the validity and reliability of students' behavioural belief, normative belief, and control belief toward critical reading.

Methodology

A descriptive research design with survey was used to elicit and validate students' beliefs in this study. This study employed three stages; Phase 1 – Elicitation Study; Phase 2 – Expert Panel Review; and Phase 3 – Evaluation using exploratory factor analysis.

The first stage observes distributing open-ended surveys to undergraduates to elicit their salient beliefs toward critical reading. The survey contains 1 demographic question (gender) and 6 open-ended questions which were adapted from Ajzen (1991, 2006) and Sutton et al., (2003) to elicit students' beliefs toward critical reading. A total of 30 open-ended questionnaires were self-administered to undergraduates randomly selected from a language proficiency class in a public university in Malaysia. A total of 27 open-ended questionnaires were returned which achieved a response rate of 90%. This fulfilled the minimum number of respondents needed for an elicitation study which was 25 as recommended by Francis et al. (2004). Respondents were

informed of the purpose of the survey and were encouraged to list as many answers that they like. The data were analysed qualitatively and tabulated using frequency, percentage, and mean.

In order to identify the final set of salient beliefs, three rules were suggested by Ajzen (1991, 2006) which are as follows:

1. Include the ten or twelve most frequently mentioned beliefs.
2. Include those beliefs that exceed a particular frequency. For example, all beliefs mentioned by at least 10 % or 20 % of the sample.
3. Choose as many beliefs as necessary to account for a certain percentage (e.g. 75 %) of all beliefs mentioned.

This study employed the third rule as Francis et al. (2004) mentioned that the final set of salient beliefs for a study can be selected from 75 % of all beliefs stated in the elicitation study. This rule also provides adequate coverage of the beliefs of the target population.

Once the final salient beliefs were finalised, they were added to a closed-ended questionnaire and was submitted for review to a panel of experts. Necessary changes were made according to the feedback from the experts in the second stage. The third stage was the pilot study which required beliefs from three questions (advantages, approve, and difficulties) to be subjected to exploratory factor analysis. Items from these three questions were incorporated in a closed-ended questionnaire and a 10-point Likert scale ranging from 1 - Strongly Disagree to 10 - Strongly Agree was used (Awang et al., 2015, 2016). A total of 131 undergraduates from a public university in Malaysia were chosen from three language proficiency classes in a Malaysian public university where simple random sampling was employed. A response rate of 92% was attained as 11 questionnaires were incomplete. The final number of 120 fulfilled the required minimum sample size of 100 for exploratory factor analysis (Bahkia et al., 2019).

In this paper, EFA was employed to obtain the underlying dimension of behavioural belief, normative belief, and control belief. Several conditions in EFA must be considered. First, the value of the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy (MSA) should be greater than 0.50. Secondly, Bartlett's test of Sphericity results should be significant at $p < 0.001$ as recommended by Hair et al. (2014). In EFA, the principal component analysis was employed to examine the extraction of factors in order to determine the number of factors to be retained and dropped where Varimax rotation was applied as it was the most widely used orthogonal factor rotation method as it can clarify the analysis of factors (Hair et al., 2014). Items that attained factor loadings with an absolute value below than ±0.5 were discarded while items with factor loading values of more than ±0.55 were retained (Hair et al., 2014). Data analysis was performed using Statistical Package for Social Science (SPSS). Descriptive analysis was used to summarise the respondents'

characteristics. EFA was used to determine the validity of the elicited salient beliefs while Cronbach's alpha coefficient and item analysis verified the reliability of the instrument.

Findings

Demographic Profile

Table 1 depicts the demographic profile of the respondents from two stages which were elicitation survey and pilot study. A majority of the respondents who participated in the elicitation survey was male students (74%). Survey in the pilot study was completed by 76 male students (58%) and 55 female students (42%).

Table 1: Demographic Profile of Respondents

	Male		Female		Total
	Frequency	Percentage (%)	Frequency	Percentage (%)	Frequency
Elicitation Survey	20	74	7	26	27
Pilot Study	76	58	55	42	131

Research Objective 1

Two open-ended questions were adapted to elicit students' behavioural beliefs toward critical reading. The first open-ended question was "What do you think would be the advantages if you read critically?". The second open-ended question was "What do you think would be the disadvantages for you if you read critically?" Table 2 demonstrates the distribution of beliefs among the respondents for these two questions.

Table 2: Advantages and Disadvantages in Critical Reading

No	Advantage	Frequency (n=27)	Percentage (%)	Disadvantage	Frequency (n=27)	Percentage (%)	Rank
1.	Knowledge increases	25	92.59	Higher level of stress	21	77.78	1
2.	English language improves	22	81.48	Jealousy and increased competition	16	59.26	2
3.	Creativity improves	10	37.04	Being taken advantage of	8	29.63	3
4.	Level of concentration improves	9	33.33				4

Table 2 depicts that two advantages, knowledge increases and English language improves, attained 92.59% and 81.48%, respectively. Creativity improves and level of concentration improves were also listed as advantages by students although they attained lower scores at 37.04% and 33.33%, respectively. There was

a difference of 48.15% between the highest disadvantage and the lowest disadvantage. Disadvantage that students reported the most was higher level of stress at 77.78% while the lowest disadvantage was being taken advantage of at 29.63%.

Two open-ended questions were adapted to elicit students' normative beliefs toward critical reading. The first open-ended question was "Are there any group of people who would approve of you being a critical reader?" The second open-ended question was "Are there any group of people who would disapprove of you being a critical reader?". Table 3 demonstrates the distribution of beliefs among respondents for the "approve" and "disapprove" questions.

Table 3: Approve and Disapprove in Critical Reading

No.	Beliefs	Approve			Disapprove		
		Frequency (n=27)	Percentage (%)	Rank	Frequency (n=27)	Percentage (%)	Rank
1.	Parents	21	77.78	1			
2.	Friends	18	66.67	2	10	37.04	1
3.	Lecturers	17	62.96	3			
4.	Future Employers	15	55.56	4			

A total of 77.78% of respondents listed that parents would be the group that would approve the most and followed closely by friends and lecturers. Yet, 37.04% respondents revealed that friends could disapprove of them being critical readers. Future employers were acknowledged as a group who would approve of them bring critical readers with 55.56%.

Two open-ended questions were adapted to elicit students' control beliefs toward critical reading. The first open-ended question was "What do you think would make it difficult for you to be a critical reader?". The second open-ended question was "What do you think would make it easy for you to be a critical reader?". Table 4 demonstrates the distribution of beliefs among respondents for the "difficulties" and "enablers' questions.

Table 4: Difficulties and Enablers in Critical Reading

No.	Difficulty Beliefs	Frequency (n=27)	Percentage (%)	Enabler Beliefs	Frequency (n=27)	Percentage (%)	Rank
1.	Lack of motivation	24	88.89	Peaceful environment	19	70.37	1
2.	Low English language proficiency	20	74.07	Support from teachers and friends	17	62.96	2
3.	Mental fatigue	19	70.37				3
4.	Fear of negative feedback	17	62.96				4
5.	Fear of being wrong	14	51.85				5

Table 4 detailed that students identified more difficulties than enablers in becoming a critical reader. Difficulty that attained the highest percentage was lack of motivation at 88.89%. Low English language proficiency was also identified as a difficulty by respondents at 74.07% and followed closely by mental fatigue at 70.37%. Fear of negative feedback and fear of being wrong were also listed as difficulties that hinder respondents from becoming critical readers at 62.96% and 51.85%, respectively. Table 4 shows that 19 respondents highlighted peaceful environment would be an excellent enabler in improving their critical reading at 70.37%. This is trailed closely by support from teachers and friends at 62.96%.

Research Objective 2

Exploratory Factor Analysis (EFA)

The data from the pilot study were concluded as suitable for exploratory factor analysis as results from two tests which are Kaiser-Meyer-Olkin (KMO) and Bartlett's test of sphericity. These tests established that all beliefs extracted from the elicitation survey were significant. The values of KMO for all constructs exceeded 0.5 while Bartlett's test of sphericity for all constructs were significant ($p<0.001$). Table 5 presents the results of KMO and Bartlett's test of sphericity for behavioural belief, normative belief, and control belief.

Table 5: KMO and Bartlett's Test of Sphericity

Construct	KMO (>0.50)	Bartlett's Test of Sphericity (<0.001)
Behavioural belief	0.799	0.000
Normative Belief	0.728	0.000
Control Belief	0.846	0.000

Table 6 presents the retained items of the three constructs namely, behavioural belief, normative belief, and control belief after exploratory factor analysis was conducted. No items were dropped from all three constructs. All four items in the behavioural belief construct obtained factor loading values of more than 0.5. The eigenvalue for the four items was 3.047 which surpassed the recommended value 1 and above. All the items explained 76.17% of the total variance which also surpassed the recommended point of 60% as suggested by Hair et al. (2014).

Five items were added from the elicitation study to measure normative beliefs. After EFA, no items were dropped as the factor loading for all five items was higher than 0.50. The eigenvalue for the four items was 3.169 which surpassed the recommended value 1 and above. All the items explained 63.38% of the total variance which also surpassed the recommended point of 60% as recommended by Hair et al. (2014).

Five items were incorporated in the questionnaire to measure the control belief construct. After EFA, no items were dropped as the factor loading of all five items were higher than 0.50. The eigenvalue for the five items was 3.775 which surpassed the recommended value 1 and above. All the items explained 75.50%

of the total variance which also surpassed the recommended point of 60% as suggested by Hair et al. (2014).

Table 6: Exploratory Factor Analysis Results

No.	Items	Factor Loading	Eigenvalue	Total Variance Explained (%)
	Behavioural Belief:		3.047	76.17
1.	My general knowledge increases when I read critically	0.873		
2.	My level of English Language improves when I read critically	0.911		
3.	My creative thinking improves when I read critically	0.828		
4.	My level of concentration improves when I read critically	0.877		
	Normative Belief:		3.169	63.38
1.	My parents think I should read critically	0.813		
2.	My friends think I should read critically	0.852		
3.	My lecturer would approve of me reading critically	0.783		
4.	My future employers would approve of me reading critically	0.822		
	Control Belief:		3.775	75.50
1.	I become unmotivated when I read critically	0.828		
2.	Low English proficiency makes it difficult for me to read critically	0.867		
3.	I experience mental fatigue when I read critically	0.873		
4.	My fear of negative feedback stops me from reading critically	0.899		
5.	My fear of being wrong stops me from reading critically	0.877		

Reliability

The internal reliability of an instrument was measured to ensure that the instrument is free from random error and does not contain bias (Sekaran & Bougie, 2016). Thus, Cronbach's alpha was utilised to examine the internal consistency of behavioural belief, normative belief, and control belief. This method was utilised as it is one of the most widely used methods to evaluate reliability where the value of 0.6 and above indicates acceptable internal consistency reliability (Hair et al., 2014).

Table 7: Reliability Results

Construct	Number of Items (Before item deletion)	Cronbach's Alpha	Number of Items (After item deletion)	Cronbach's Alpha
Behavioural belief	4	0.893	4	0.893
Normative belief	5	0.854	5	0.854
Control belief	5	0.918	5	0.918

Table 7 reported that all three constructs of behavioural belief, normative belief, and control belief were reliable as they surpassed the minimum reliability value of 0.6 (Ehido et al., 2020). Control belief achieved the highest reliability of 0.918 while the lowest reliability value was attained by normative belief at 0.854. Behavioural belief came in second with 0.893. Table 7 also illustrates that no items were deleted among these three constructs as the factor loading for all items in every construct was satisfactory as reported in Table 6. Thus, the construct reliability of these three constructs was established.

Discussions

Findings from the elicitation survey revealed that students were highly aware of the advantages of critical reading. Two advantages, "knowledge increases" and "English language improves", were listed by at least 80% of the respondents. Yet, students reported that critical reading might contribute to a higher level of stress. This is supported by a difficulty listed by 70.37% of the respondents which is mental fatigue. Students have also acknowledged that there is a possibility of increased competition and they are afraid of being taken advantage of if they read critically as in Table 2. This aligns with 37.04% of respondents identifying that friends would be the only group that would disapprove them of being critical readers.

Two interesting beliefs were elicited from students on the difficulties that hinder them from being critical readers. These two beliefs are "fear of negative feedback" and "fear of being wrong" which attained 62.96% and 51.85%, respectively. The existence of these fears could be attributed to students' being intimidated to articulate their opinions as evidenced by Koo (2003) and Wallace (2003). Another plausible reason for students being afraid to negative feedback is the didactic nature of classrooms as revealed by Ahmad Mazli Muhammad (2007), Kaur and Sidhu (2014), and Koo et al. (2012). These fears have also received significant agreement from respondents in the pilot study as they attained high factor loadings of 0.899 and 0.877, respectively. Belief that attained the highest factor loading was "My level of English language improves" which demonstrates that students acknowledged the importance of critical reading in improving their language proficiency. This is in accordance with findings from Fook and Sidhu (2015) as they revealed that students find it challenging to verbalise their opinion due to their limited vocabulary. In conclusion, all beliefs that were extracted from the elicitation study have achieved significantly high values of factor loading between 0.7 and 0.9. This established that these beliefs are valid and should be examined further in the future in different contexts.

This study recommends future studies to conduct the elicitation study on a larger sample size. A larger sample size would assist in identifying more salient beliefs that would enrich the critical reading literature. Another recommendation for future researchers is to elicit and compare salient beliefs toward critical reading between public and private university students. A comparison analysis would provide a more detailed understanding of the beliefs that influence students' critical reading performance. Another suggestion for future

studies is to examine the relationship of these beliefs toward students' critical reading performance as this was not addressed in this study.

Conclusion

An important contribution of this study is the elicitation of students' salient beliefs which have shed light on students' difficulties in critical reading (control belief), students' perception of the advantages and disadvantages of participating in critical reading (behavioural belief), and students' identification of people who would approve them of participating in critical reading (normative belief) in the Malaysian university setting. Although this step is highly recommended in the construction of TPB-based questionnaires, it is often disregarded by researchers. Hence, the elicitation of the students' salient beliefs in this study not only contributed to the Theory of Planned Behaviour's literature on elicitation studies, but the elicitation has also identified more relevant factors that influence students' perception towards critical reading. This study has also conducted exploratory factor analysis which validated all elicited beliefs. The rigorous scale development established the usability of these beliefs in future research and a better understanding of the beliefs that affect students' critical reading perception and performance was gained. Findings from this study can aid the relevant stakeholders such as educators and policymakers to design solutions that can address students' difficulties identified in this study.

Acknowledgements

References

Ahmad Mazli Muhammad. (2007). *The Effectiveness of an Academic Reading Course in Facilitating Tertiary Students' Comprehension oF Academic Text*. https://doi.org/10.1017/CBO9781107415324.004

Ajzen, I. (1991). The Theory of Planned Behavior. *Organizational Behaviour and Human Devision Processes*, *50*(2), 179–211.

Ajzen, I. (2006). *Constructing a TPB Questionnaire : Conceptual and Methodological Considerations*.

Anuar, N., & Sidhu, G. K. (2017). Critical reading skills : A Survey of Postgraduate Students ' Perspective of Critical Reading. *Pertanika Journal of Social Science and Humanities*, *25*, 163–172.

Awang, Z., Afthanorhan, A., & Mamat, M. (2016). The Likert scale analysis using parametric based Structural Equation Modeling (SEM). *Computational Methods in Social Sciences*, *4*(1), 13–21. https://doi.org/10.5281/zenodo.1299429

Awang, Z., Afthanorhan, A., Mohamad, M., & Asri, M. A. M. (2015). An evaluation of measurement model for medical tourism research: the confirmatory factor analysis approach. *International Journal of Tourism Policy*, *6*(1), 29. https://doi.org/10.1504/ijtp.2015.075141

Bahkia, A. S., Awang, Z., Afthanorhan, A., Ghazali, P. L., & Foziah, H. (2019). Exploratory factor analysis on occupational stress in context of Malaysian sewerage operations. *AIP Conference Proceedings*, *2138*(August). https://doi.org/10.1063/1.5121111

Benedict, J. (2013). Using Popular-press Nutrition Books to Develop Critical Reading Skills of First-Year College Students. *Journal of Nutrition Education and Behavior*, *45*(2), 188–190. https://doi.org/10.1016/j.jneb.2012.07.006

Cheon, J., Lee, S., Crooks, S. M., & Song, J. (2012). An investigation of mobile learning readiness in higher education based on the theory of planned behavior. *Computers and Education*, *59*(3), 1054–1064. https://doi.org/10.1016/j.compedu.2012.04.015

Crismore, A. (2000). *Helping ESL and EFL University Students Read Critically: A 2000's Challenge*.

Darker, C. D., French, D. R., Longdon, S., Morris, K., & Eves, F. F. (2007). Are beliefs elicited biased by question order? A theory of planned behaviour belief elicitation study about walking in the UK general population. *British Journal of Health Psychology*, *12*(1), 93–110. https://doi.org/10.1348/135910706X100458

Douglas, N. L. (2010). Enemies of Critical Thinking: Lessons from Social Psychology Research. *Reading Psychology*, *21*(2), 129–144. https://doi.org/10.1080/02702710050084455

Ehido, A., Awang, Z., Halim, B. A., & Ibeabuchi, C. (2020). Developing items for measuring quality of work life among malaysian academics: An exploratory factor analysis procedure. *Humanities and Social Sciences Reviews*, *8*(3), 1295–1309. https://doi.org/10.18510/HSSR.2020.83132

Flowers, E. P., Freeman, P., & Gladwell, V. F. (2017). The development of three questionnaires to assess beliefs about green exercise. *International Journal of Environmental Research and Public Health*, *14*(10). https://doi.org/10.3390/ijerph14101172

Fook, C. Y., & Sidhu, G. K. (2015). Investigating Learning Challenges Faced by Students in Higher Education. *Procedia - Social and Behavioral Sciences*, *186*, 604–612. https://doi.org/10.1016/j.sbspro.2015.04.001

Francis, J., Eccles, M. P., Johnston, M., Walker, A. E., Grimshaw, J. M., Foy, R., Kaner, E. F. S., Smith, L., & Bonetti, D. (2004). *Constructing Questionnaires Based on The Theory of Planned Behaviour: A Manual for Health Services Researchers*.

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2014). *Multivariate Data Analysis* (7th Editio). https://doi.org/10.1038/259433b0

Herath, C. S. (2010). Eliciting Salient Beliefs are Critical to Predict Behavioural Change in Theory of Planned Behaviour. *Psychologie*, *4*(3).

Kaur, S., & Sidhu, G. K. (2014). Evaluating the Critical Literacy Practices of Tertiary Students. *Procedia - Social and Behavioral Sciences*, *123*, 44–52. https://doi.org/10.1016/j.sbspro.2014.01.1396

Koo. Y. L., Wong F. F., & Kemboja Ismail. (2012). Students' Critical Consciousness through CritiCal Literacy Awareness. *GEMA Online Journal of Language Studies*, *12*(1), 81–87. https://doi.org/10.1007/s13398-014-0173-7.2

Koo, Y. L. (2003). Socioculturally-oriented critical reading in the learning space: Empowering multicultural/lingual voices. In *New Literacies, New Practices, New Times* (pp. 128–138). Universiti Putra Malaysia Press.

Kress, G. (2010). *Multimodality: A Social Semiotic Approach to Contemporary Communication*. Routledge. https://doi.org/10.1016/j.pragma.2011.06.013

Malaysia Ministry of Education. (2015). Malaysia Education Blueprint 2015-2025. *Ministry of Education Malaysia, 2025*, 1–40. http://medcontent.metapress.com/index/A65RM03P4874243N.pdf

Marin, M. A., & Pava, L. De. (2017). Conceptions of Critical Thinking from University EFL Teachers. *English Language Teaching*, *10*(7), 78–88. https://doi.org/10.5539/elt.v10n7p78

Marschall, S., & Davis, C. (2015). A Conceptual Framework for Teaching Critical Reading to Adult College Students. *Adult Learning*, *23*(2), 63–68. https://doi.org/10.1177/1045159512444265.

Mclaughlin, M., & Devoogd, G. (2004). Critical literacy as comprehension : Expanding reader response. *Journal of Adolescent & Adult Literacy*, *September*, 52–62. https://doi.org/10.1598/JAAL.48.1.5

Miesen, H. (2003). *The motivational determinants of literary reading : Planned behavior*. 1–26.

Mohd Zin, Z., Eng, W. B., & Rafik-Galea, S. (2014). Critical reading ability and its relation to L2 proficiency of Malaysian ESL learners. *3L: Language, Linguistics, Literature*, *20*(2), 43–54. https://doi.org/10.17576/3l-2014-2002-04

Nambiar, R. M. K. (2007). Enhancing Academic Literacy among Tertiary Learners: A Malaysian Experience. *3L : Language, Linguistics, Literature*, *13*, 77–94.

Norbaiyah Kadir, Roose N Subki, Farah Haneem Ahmad Jamal, & Juhaida Ismail. (2014). the Importance of Teaching Critical Reading Skills in a Malaysian Reading Classroom. *2014 WEI International Conference Proceedings*, 208–219.

Oluka, O. C., Nie, S., & Sun, Y. (2014). Quality Assessment of TPB-Based Questionnaires : A Systematic Review. *PLoS ONE*, *9*(4). https://doi.org/10.1371/journal.pone.0094419

Phakiti, A., & Li, L. (2011). General academic difficulties and reading and writing difficulties among Asian ESL postgraduate students in TESOL at an Australian University. *RELC Journal*, *42*(3), 227–264. https://doi.org/10.1177/0033688211421417

Sekaran, U., & Bougie, R. (2016). *Research Methods for Business: A Skill-Building Approach* (6th ed.). United Kingdon: John Wiley and Sons Ltd.

Sidhu, G. K., Kaur, S., Choo, L. P., & Fook, C. Y. (2015). Assessing the Critical Reading Skills of Postgraduate Students: Perspectives of Supervisors and Supervisees. *Assessment for Learning Within and Beyond the Classroom*, 43–52.

Sutton, S., French, D. P., Hennings, S. J., Mitchell, J. O., Wareham, N. J., Griffin, S., Hardeman, W., & Kinmonth, A. N. N. L. (2003). Eliciting Salient Beliefs in Research on the Theory of Planned Behaviour : The Effect of Question Wording. *Current Psychology: Developmental, Learning, Personality, Social..*, *22*(3), 234–251.

Tan, C. L. H., Hassali, M. A., Saleem, F., Shafie, A. A., Aljadhay, H., & Gan, V. B. Y. (2016). Building intentions with the theory of planned behaviour: a qualitative assessment of salient beliefs about pharmacy value added services in Malaysia. *Health Expectations*, *19*(6), 1215–1225. https://doi.org/10.1111/hex.12416

Thistlethwaite, L. L. (1990). Critical Reading for At-Risk Students. *Journal of Reading*, *33*(8), 586–593.

Wallace, C. (2003). *Critical Reading in Language Education*.

Watson, G., & Reissner, S. (2014). *Developing Skills for Business Leadership* (2nd ed.). CIPD.

WEF. (2018). The Future of Jobs Report 2018. In *Economic Development Quarterly* (Vol. 31, Issue 2).

Wilson, K. (2016). Critical reading, critical thinking: delicate scaffolding in English for Academic Purposes (EAP). *Thinking Skills and Creativity*. https://doi.org/10.1016/j.tsc.2016.10.002