# Students' Perspectives towards Blended Learning Approach: A Preliminary Study in UiTM Pahang

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**Abstract:** Blended learning approach uses two mediums: face-to-face interactions and knowledge through online delivery. Although a blended learning environment offers greater time flexibility for the students, there is an increasing concern for their own learning progress management. Therefore, the main objective of this study is to determine UiTM Pahang students' perspectives on blended learning. A set of questionnaire was distributed to a cluster of Bachelor in Office Systems Management (BOSM) students who have been registered in blended learning course. The data was analyzed for descriptive and correlation analysis using the SPSS Version 21. Analyzing a total of 77 responses collected from respondents, the result showed a small positive correlation between students' perspective and blended learning approach. The findings specify that the mean score for all dimensions were moderate. The findings of the present study indicated that the mean score for quality of interaction was 2.88, mean score for participation in blended learning was 3.03, mean score for quality of teaching was 3.07 and the mean score for quality of online resources was 2.92. These findings pose several implications to academicians and students. The study also paves the way for other researchers to conduct studies in similar areas especially regarding ways to enhance the effectiveness in blended learning approach. It is hoped that the findings would provide significant contributions to the areas of teaching and learning in a blended learning environment.

**Keywords:** Blended Learning, High achievers, Low achievers, Perspectives

## 1. Introduction

Higher Educational Institutions have been encouraged by the Ministry of Education (MOE) to adopt ICT in their management. With ICT as an enabler, education is totally transformed where educators act as facilitators of the use of ICT to allow the students to gain unlimited amount of information in order to generate an in-depth understanding of a particular subject or topic (Policy on ICT Education, 2010). As stated by Farahiza (2010), both the traditional classroom learning and pure e-learning offer strengths and limitations, thus, it is better to combine the strength of face-to-face learning and online learning into a new delivery method called blended learning. According to Larsen (2012), institutional motivations for promoting blended learning may focus on the potential savings that can be realized by moving some contact hours online, which reduces the need for physical meeting space and classrooms with their associated costs. Therefore, institutions see it as a model that makes efficient use of a classroom, and students appear to be more satisfied and achieve higher grades than either fully face-to-face or online interactions.

UiTM in particular, has its own learning management systems known as iLearn Portal. Blended learning initiatives were introduced to UiTM lecturers and students in 2009 and all courses were expected to be conducted online by June 2013 (Blended Learning for Lecturers, Students and Admin Guideline). There were also instructions from Academic Affairs Division that 30% of degree programs should be conducted online (BLeC, 2015). In UiTM Pahang, the program of Bachelor in Office Systems Management (BOSM) has been ordered by the faculty to begin blended learning courses in Semester September 2014 – January 2015. Since this was the first semester

BOSM students were being introduced to blended learning approach, it will be interesting to look at their perspectives. High achievers were expected to have positive perspective towards blended learning as compared to low achievers. In a study by Owsten, York and Murtha (2013), they suggested that the highest achievers were most satisfied with their blended course and the lowest achievers were the least satisfied.

After going through literature of past studies, it was found that there were many research conducted in Malaysia that focuses on blended learning perspectives among university students. However, the focus on high achieving and low achieving students was still lacking. Therefore, the researchers have decided to fill the gap and contribute to the body of knowledge by conducting a research on a cluster of Bachelor in Office Systems Management students, who have registered for blended learning courses as part of their study plan. The selected students were those who have registered in blended learning courses for the September 2014 – January 2015 semester. These respondents were from Part 4 and Part 5 students who have registered for blended learning courses (ASM552 and ASM553; ASM601, ASM602 and ASM603 respectively). Since the researchers would like to get views from the senior students on the issue, thus, Part 3 students, as the new students in the program, were excluded from the study.

The research was conducted with the following objectives:

1. To determine the students' perspectives towards blended learning approach among UiTM Pahang BOSM students.
2. To examine the level of acceptance towards blended learning approach among UiTM Pahang BOSM students.

The research answered the following questions:

1. Is there any relationship between types of students and blended learning approach among UiTM Pahang BOSM students?
2. How do UiTM Pahang BOSM students perceive blended learning approach?
3. What is the level of acceptance towards blended learning approach among UiTM Pahang BOSM students?

## 2. Literature Review

The Ministry of Education (MOE) Malaysia believes that the use of ICT in teaching and learning as well as in schools and educational institutions, administration and management areas is a prerequisite for Malaysia to be a high-income nation (Policy on ICT Education, 2010). There are a lot of arguments about the definition of blended learning. Finn and Bucceri (2004) provide a detailed definition that describes blended learning as an effective integration of multiple learning techniques, technologies, and delivery modes to meet specific communication, knowledge sharing, and informational needs of learners. According to Kim Won (2007), blended learning is learning outside the traditional classroom using information technology for the delivery of the learning materials. Meanwhile, Kim, Bonk and Oh (2008) defined blended learning as the mixing of traditional face-to-face approach with online approach. It was further stated that the combination of two kinds of learning environment, physical classroom learning and online, enhances the learning outcomes (Kudrik, Lahn & Morch, 2009). Though it can be defined in various definitions, blended learning is generally a student-centered, self-paced, flexible and multi modal approach to learning (Garrison & Vaughan, 2008; Neals, 2010).

In Malaysia, the adoption of blended learning is no longer a new thing because most of the institutions have realized the benefits of its implementation in the teaching and learning process. Students have a positive view about the use of blended learning. The flexibility of the system such as easily downloadable subject contents, notes, and flexibility in time make the students realize that it will be beneficial to their study. Even though students are not informed about the benefits of using the system on their learning process, the students can see the benefits of using it and help them to become an independent learner (Amiza, Mohammad & Norlidah, 2015). Poon (2012) also mentioned that not only the students perform better, but the organization can save cost and resources as well. Meanwhile, Lopez-Perez, Perez-Lopez and Rodriguez-Ariza (2011) pointed out that, when information technology is adopted to complement traditional modes of classroom teaching, tertiary students seem to prefer this approach. On the other hand, Kilmurray (2003) warns IHLs that merely replicating the classroom experience in the web environment may not meet student needs and could result in an unexpected failure. This shows that there are many challenges in online learning when involving students. Thus, consideration should be given in assessing the blended learning elements.

## 3. Blended Learning Elements

### 3.1 Quality of Interaction

Harris, Connolly and Feeney (2009) suggest that interaction and discussion are an important aspect in the learning process and thus should be incorporated into the blended learning environment. Interaction can be defined as the feedback between the instructor-student and student-student. Moore (1989) stated there are three types of interaction in learning which is learner–instruction interaction, learner-content interaction and learner-learner interaction. The first interaction is learner-instruction, which is the most crucial interaction needed by the students. This kind of interaction provides motivation, feedback and dialogue between student and teacher. Meanwhile, the second interaction, learner-content interaction is the kind of interaction where the student wants to acquire facts and he or she can acquire it from the media (CD Rom, or Web Based). Meanwhile learner-learner interaction is when the student uses the knowledge. A study by Chan Du and Whu Chia (2014) found that there are impacts of interaction on student performance and student satisfaction on blended learning mode. The result indicated that student's evaluation improved that is there is a higher level of satisfaction in learning if high interaction is given by their instructor.

### 3.2 Participations in Blended Discussion

According to Vonderwell and Sachariah (2005), participation can be defined as "student actively taking part and joining in a dialogue for engaged and active learning". For the blended learning environment, participation is not measured by how much the student post in a discussion forum but this method required more than that. Active learning and learning centered should be triggered by the students themselves (p.214). Tsai (2010) describes this aspect as a self-regulated learning process in which learners make an intended effort to plan, to manage, and to direct learning activities as well as to share learning responsibility with their instructors. Blended learning provides autonomy for students to be responsible in their learning, which calls for self-discipline and self-motivation (Smyth, Houghton, Cooney & Casey, 2012). Active participation, which gives students a feeling of stronger engagement and a perception of better learning quality, is a key for students to perform well in blended learning courses (Owston et al., 2013).

In the study by Edginton and Holbrook (2010), it is found that when students first using the system, they will have an unsure feeling about how to communicate with their instructor. However, when the students are familiar with the system, their perceptions shift and are more focused on the time flexibility. Besides, students will engage and participate more in the online discussion compared to the class discussion (Shroff and Vogel, 2010). However, when comparing the quality of students' discussions in face-to-face and online environments, Bliuc et al. (2011), found that online discussions are not as high quality as face-to-face discussions. Yin Lin & Chu (n.d.) pointed out the key factors that influence participation in online learning includes the sense of community, instructor involvement, life characteristics and prior experiences, interaction, learning styles, and motivation.

However, there are several problems faced by students when using the blended learning system. Students have difficulty accessing the system that they have to explore on their own. Besides, student also feel uneasy to communicate using the system where they have to communicate properly in a formal and serious manner which is vice versa from the other social networking where they can express themselves freely. Overall, the students hope the blended learning system will be friendlier and easier to use (Aminza et al., 2015).

### 3.3 Online Response by Lecturers

Teacher presence is an important element to support the learning process. Some of the students love to learn on their own but at the same time with guidance from their instructor. The implementation of blended learning makes them feel that learning is more meaningful (Napier, Dekhane & Smith, 2011). Some students report that they receive instructor feedback and their grades faster than in traditional courses (Korr, Derwin, Greene & Sokoloff, 2012). The quality of teaching assistants was rated significantly better by the students in blended courses compared with the traditional face-to-face learning environment (Woltering, Herrler, Spitzer & Spreckelsen, 2009). Discussing about the quality of teaching in blended learning, several factors need to be considered. Past studies have argued on measuring the quality of blended learning when the systems only function as a part to support the learning process. The quality only can be measured by the learning outcome received by the students. So in order to measure the quality of blended learning, the researchers decided to measure student perception on blended learning and approach in learning and studying. The result revealed that, the quality of blended learning will be influenced by the students' positive perception and will lead to good result. Teaching strategies and interaction plays an importance role in deciding student's perception and their grades. Feedback should be given on time and interaction should occur as much as possible to promote their understanding about the system in their learning process (Ellies & Gins, 2007).

### 3.4 Quality of Online Resources

To promote the quality of learning, the resources should be meaningful and relevant to the student. As such, resources posted online should be clear and well supported by the instructor. However, not all the instructors use this opportunity and advantage in using the technology in learning environment (Oliver & Herrington, 2003). Past studies have reported that students who prefer online learning feel that they have quality time to think about and to respond to asynchronous discussions more effectively (Collopy & Arnold, 2009; Howard, 2009). Lo (2010) found that students in the blended courses who are motivated and gratified with the instructors' support and course policies tend to perceive their learning outcomes higher. Ellis, Ginns and Piggott (2009), revealed another important issue for students to their learning process is how the online activities

are designed. However, some of them seem to be less concerned about the website design and how the material can explain things when the result is mixed with the responses by the students.

### 3.5 Students' Perspectives and Types of Students

A lot of research demonstrate that students have positive perspectives with blended courses (Sagarra & Zapata, 2008; Hong & Samimy, 2010). Students' perspectives towards blended learning approach vary based on many factors such as students' satisfaction and perception of learning (Akkoyunlu & Soylu, 2008) and students' attitudes and mentality (Roslina, Nur Shaminah & Sian-Hoon, 2013). In this study however, the researchers focused only on types of students. Since different students have different preferred learning styles, it is important to understand the expectations and understanding level of high achievers and low achievers students.

High achievers is defined as those students who achieve an average of 90% of their courses (Burrow, Dooley, Wright & DeClou, 2012). According to Owston et al. (2013), high achieving students are very satisfied with courses that use blended learning (both face-to-face and online activities). A study by Svanum and Aigner (2011) indicate that the students who were motivated and invested their effort in the course were more likely to succeed and to express higher satisfaction with the course. This is further stressed by Lo (2010) that concluded students in the blended courses who were motivated and gratified with the instructors' support and course policies tend to perceive their learning outcomes higher.

Meanwhile, many studies found contradictory findings for low achievers. Underachievement is most commonly defined as a discrepancy between potential and performance. According to Betsy (2001), a student who appears capable of succeeding in study but is nonetheless struggling is often referred to as underachievers. The learning maturity and readiness of students for blended learning along with demands for autonomous learning should also be taken into account (Tabor, 2007). Owston et al. (2013) found that low grade achievers who lacked the initiative to learn independently were less satisfied and demanded traditional face-to-face classroom learning, which would have provided them a scheduled learning environment.

Consequently, though many literatures were found on this issue, there are still a lacking number of studies done in Malaysian context, particularly in the high and low achievers' perspectives on blended learning approach. Therefore, the researchers intended to conduct this study in order to determine if there is any significant relationship between types of students (high achievers and low achievers) and blended learning approach.

## 4. Research Framework

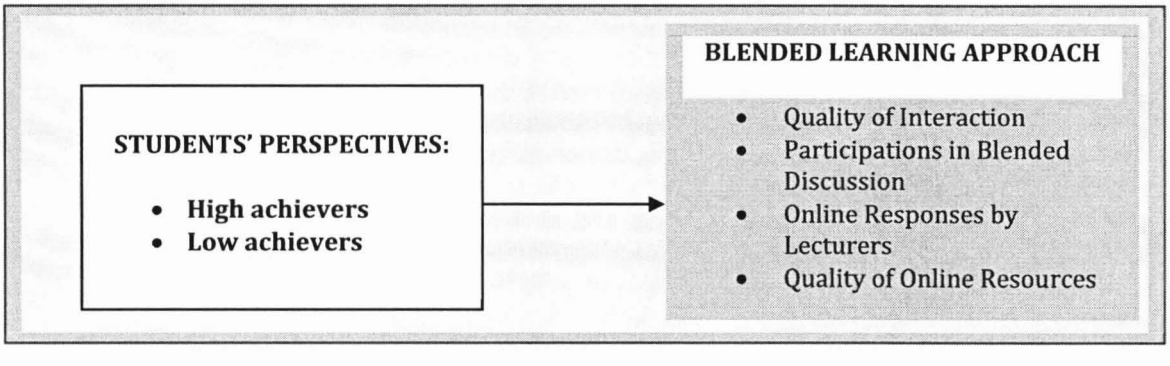


**Fig 1.** UiTM Pahang BOSM students' perspectives on blended learning approach

## 5. Methodology

A set of questionnaire was used as the instrument of the study. This study used cluster sampling method, only Part 4 and Part 5 BOSM students were selected as the respondents. Part 3 students were excluded from this study because they are new students. A total of 107 questionnaires were distributed to the respondents, however, only 77 returned.

The questionnaire was adapted from Ellies and Gins (2007) to measure the relationship between students' perspectives and blended learning approach in this study. Section A included 4 items designed to gather demographic information such as age, gender, current GPA and the number of blended courses registered. In this study, high achievers refer to students who have GPA between 3.00 – 4.00. The low achievers are those students who have GPA lesser than 2.99. Section B consisted of 4 items which measured the first dimension of blended learning approach, namely the quality of interaction. Next, in Section C and D, there were 6 items each section, which measured participation in blended discussion and the online responses by lecturers. Section E focused on the quality of online resources (4 items). All responses to each item in Section B – Section F were measured using a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

The Cronbach's Alpha scale was used to measure the reliability of the instrument. In this study, items number 20 and 23 in the questionnaires were negatively worded. Therefore, the value score for the items was reversed before the reliability of the instrument being measured. The overall scores obtained for all sections is 0.71 and this was generally acceptable for field research (Hair, Babin, Anderson, Tatham & Black, 2006). Therefore, the data suggested that the questionnaire was a reliable instrument to consistently measure the level of each variable of the study.

**Cronbach's Alpha Scores for Reliability Statistics**

| Cronbach's Alpha | Cronbach's Alpha Based on Standardized Items | N of Items |
|---|---|---|
| .713 | .713 | 5 |

## 6. Findings and Discussions

A total of 107 survey questionnaire was distributed to the students. They were given a week to complete the questionnaire. However, only 77 respondents returned the questionnaires. Therefore, the total response rate was 81.1% (n = 77). The data were analyzed using SPSS version 21. The sample was made from BM232 part 4 and 5 students who have registered blended learning courses for semester September 2014 – January 2015. The items in the demographic part of the questionnaires include age, gender, current Grade Point Average (GPA), and the number of blended courses registered for the semester. Responses to the questions in Section A provided a good picture of the background of the respondents, as shown below:

**Table 1.** Age

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | 21 | 35 | 45.5 | 45.5 | 45.5 |
| | 22 | 36 | 46.8 | 46.8 | 92.2 |
| | 23 | 3 | 3.9 | 3.9 | 96.1 |
| | 24 | 1 | 1.3 | 1.3 | 97.4 |
| | 25 | 1 | 1.3 | 1.3 | 98.7 |

| | | | | | |
|---|---|---|---|---|---|
| | 30 | 1 | 1.3 | 1.3 | 100.0 |
| | Total | 77 | 100.0 | 100.0 | |

Table 1 shows the number of respondents based on their age. The majority of 36 (46.8%) respondents were 22 years old. Another 35 (45.5%) respondents were 21 years old. There was also 1 (1.3%) respondent each with the age 24, 25 and 30 years old. Therefore, generally, the respondents in this study were youngsters.

**Table 2.** Gender

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Male | 7 | 9.1 | 9.1 | 9.1 |
| | Female | 70 | 90.9 | 90.9 | 100.0 |
| | Total | 77 | 100.0 | 100.0 | |

Table 2 shows the gender of the respondents in this study. The number of female respondents was higher than male respondents. It shows that 90.9% of the respondents were female and only 9.1% were male. This is normal since female students outnumber male students in BM232 programme.

**Table 3.** Grade Point Average (GPA)

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Less than 1.5 | 1 | 1.3 | 1.3 | 1.3 |
| | 2.0 - 2.99 | 11 | 14.3 | 14.3 | 15.6 |
| | 3.0 - 3.49 | 49 | 63.6 | 63.6 | 79.2 |
| | 3.5 - 4.0 | 16 | 20.8 | 20.8 | 100.0 |
| | Total | 77 | 100.0 | 100.0 | |

The above table illustrates the respondents' current GPA. Majority (63.6%, n = 49) of them scored GPA between 3.00 – 3.49. There were 20.8% (n = 16) of the students who participated in this study have scored GPA 3.50 – 4.00. The table also shows that there were 14.3% (n = 11) respondents who have scored GPA between 2.00 – 2.99. There were only 1.3% (n = 1) student who have less than 1.50 as her GPA.

In this study, those students who have Grade Point Average (GPA) between 2.99 – less than 1.50 was considered low achievers. Meanwhile, high achievers were those students that have GPA between 3.00 – 4.00. This is close to the Universiti Teknologi MARA's (UiTM) distinction marking between upper division level (first class and second upper class) and lower division level (second lower class and below). GPA is a commonly used indicator and can be accepted as an important indicator of high and low academic achievement. Therefore, the researchers decided to recode the previous variable (GPA) into a new variable named Types of Students. The new variable represented high achiever and low achiever student is shown in Table 4:

**Table 4.** Types of Students

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Low Achiever | 12 | 15.6 | 15.6 | 15.6 |
| | High Achiever | 65 | 84.4 | 84.4 | 100.0 |

| | | | |
|---|---|---|---|
| Total | 77 | 100.0 | 100.0 |

The above table displays that 84.4% (n=65) respondents were high achievers and only 15.6% (n=12) respondents were low achievers.

**Table 5.** Number of blended courses registered

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | 2 | 1 | 1.3 | 1.3 | 1.3 |
| | 3 | 2 | 2.6 | 2.6 | 3.9 |
| | 4 | 35 | 45.5 | 45.5 | 49.4 |
| | More than 4 | 39 | 50.6 | 50.6 | 100.0 |
| | Total | 77 | 100.0 | 100.0 | |

Table 5 shows the number of blended courses registered for the Semester September 2014 – January 2015. The majority (50.6%, n = 39) of students who participated in this study have more than 4 blended courses registered. There were also 45.5% (n = 35) of the respondents who have had 4 registered courses. Another 2.6% (n=2) respondents have registered 3 blended courses. Only 1.3% (n = 1) students have 1 blended course registered.

Meanwhile, the items in Section B – Section E measured the Blended Learning elements. In these sections, items number 20 and 23 were put in the negative form. Thus, the researchers have normalized the data by recoding the negatively worded scale items. Below are the summary of the findings:

RQ1: Is there any relationship between types of students and blended learning approach among UiTM Pahang BOSM students?

**Table 6.** Correlations

| | | Overall Perception | NG |
|---|---|---|---|
| Overall Perception | Pearson Correlation | 1 | .230* |
| | Sig. (2-tailed) | | .044 |
| | N | 77 | 77 |
| Types of Students | Pearson Correlation | .230* | 1 |
| | Sig. (2-tailed) | .044 | |
| | N | 77 | 77 |

*. Correlation is significant at the 0.05 level (2-tailed).

Table 6 shows the relationship between types of students (high achievers and low achievers) and their overall perception. The relationship is significant ($r = 0.23$, $p<0.01$). However, as Cohen (1997) suggested, this indicates a weak correlation. On the contrary, in their study, Owston et al. (2013) found a strong relationship between perceptions and students' course grade. Pape (2010) stressed that not all students may feel comfortable with new learning environments and may prefer lecturers to provide for them instead of finding information for themselves. Some students might not be able to cope with the new responsibility of taking initiative in their learning process (Vaughan, 2007) and others might experience difficulty in adjusting to the online course structure in addition to managing their time and maintaining self-motivation (Fong et al., 2005).

RQ2: How does BOSM students perceive blended learning approach?

**Table 7.** Descriptive Statistics

| | N | Mean | Std. Deviation |
|---|---|---|---|
| Mean Quality of Interaction | 77 | 2.88 | .924 |
| Mean Participation in Blended Learning | 77 | 3.03 | .674 |
| Mean Online Response by Lecturers | 77 | 3.07 | .564 |
| Mean Quality of Online Resources | 77 | 2.92 | .772 |
| Valid N (listwise) | 77 | | |

The findings of the present study indicated that the mean score for quality of interaction was 2.88. When students had a positive attitude towards learning flexibility, online learning, study management, technology, and online interaction, they were more likely to adapt to blended learning. On the other hand, when students had a positive attitude towards classroom learning, they were less likely to adapt to blended learning, as they would prefer to meet with their lecturers and classmates in a physical classroom instead of online (Chun and Lee, 2013).

The mean score for participation in blended learning was 3.03. As reported in a study of health care students' perceptions of blended learning in the UK, there were students who preferred physical meetings to digital ones (Glogowska et al., 2011). However, a study found that students initially use the system, they will have an unsure feeling about how to communicate with their instructor. However, when the students are familiar with the system, their perceptions shift and focus more on the time flexibility (Edginton and Holbrook, 2010).

The mean score for quality of teaching was 3.07. Some of the students love to learn on their own but at the same time with guidance from their instructor. The implementation of blended learning makes them feel that learning is more meaningful (Napier et al., 2011). Some students report that they receive instructor feedback and their grades faster than in traditional courses (Korr et al., 2012). The quality of teaching assistants was rated significantly better by the students in blended courses compared with the traditional face-to-face learning environment (Woltering et al., 2009).

The mean score for quality of online resources was 2.92. To promote the quality of learning, the resources should be meaningful and relevant to the student. As such, the resource that is posted online should be clear and be well supported by the instructor. However, not all the instructors use these opportunities and advantages in using the technology in learning environment (Oliver et al., 2003). A study from Ellis, Ginns and Piggott (2009), revealed that an important issue for student to learning is how the online activities are designed. However, some of them seem to be less concerned about the website design and how the material can explain things when the result is mixed with the response by the students.

RQ3: What is the level of acceptance towards blended learning approach among UiTM Pahang BOSM students?

**Table 8.** Students' Acceptance

| Students'Types | Mean | N | Std. Deviation |
|---|---|---|---|
| Low achievers | 2.42 | 12 | 1.084 |
| High achievers | 2.95 | 65 | .991 |

| | | | |
|---|---|---|---|
| Total | 2.87 | 77 | 1.018 |

The findings specify that the mean score were 2.87, as shown in Table 8. This shows moderate acceptance towards blended learning approach due to respondents' mixed feelings. Based on the table above, high achievers show the highest mean score indicating M=2.95. Meanwhile, the low achievers have a mean score of M = 2.42. This result indicates that BOSM students who have better grades were more satisfied with blended learning courses as compared to low achievers. This result supports Svanum and Aigner's (2011) study which concluded that students who did well were prone to view the course more positively; those who do less well or poorly attribute the failure to external factors including the instructor and course. As explained by Owston et al. (2013), low achievers need the structure that comes from regular face-to-face classes as they may not have the independent study skills that blended learning demands.

## 7. Limitations and Future Recommendations

This study has a few limitations. First, because BOSM students were used as the only source of data collection, there is a concern as to whether the findings can be generalized to students from other programs in UiTM Pahang as well. The researchers also recommend that students' performance should include their GPA before and after examination. Apart from that, as students who have experienced the blended learning environment might provide better opinions, it is necessary to replicate and validate the research with a group of students who have completed at least the whole blended learning courses in their programs. Future studies should also take into consideration the perspectives of faculty members especially the blended learning instructors and lecturers.

## 8. Conclusion

The focus of this study is to explore the perspectives of high and low achieving students and their acceptance towards blended learning approach. From the findings discussed above, it can be concluded that high achievers perceived blended learning approach positively as compared to low achievers. Thus, emphasize should be given to students who have low academic achievement to attract their interest. An institution must create the necessary policy, planning, resources, scheduling, and support systems to ensure that blended learning initiatives are successful (Garrison & Vaughan, 2008). The policymakers in the university will be better able to understand whether there are different effects between high and low achievers in blended courses on other factors such as satisfaction, convenience engagement and learning in the blended mode. Owston et al. (2013) stated this will help them in planning and providing supports for blended courses that typically have students with various levels of abilities.

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