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Blended Learning: Perception and Achievement of Postgraduate Program Students of Yogyakarta State University

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Abstract. ***This study aims to describe blended learning in terms of perceptions and achievements of postgraduate program students of Yogyakarta State University (UNY). The perception includes satisfaction, convenience, and involvement. This study used a survey method. The population of the study was all postgraduate students of UNY who had used blended learning. The sampling technique used random sampling with a total sample of 123 postgraduate students. The instruments used included questionnaires and documentation. Data were analyzed using quantitative descriptive. The results show that the respondents agreed with the items on the satisfaction dimension, namely learning with the blended learning system increased understanding of their core concepts, and students were motivated to succeed. Meanwhile, on the convenience dimension, student perceptions are more diverse. However, there are three items in a broad category, where blended learning can make time and costs efficient, feeling isolated, and video material that helps them in different relationships. In the last dimension, the involvement, the most prominent is the better quality of interaction with fellow friends.***

Keywords: ***blended learning, perception, achievement, satisfaction, engagement, convenience***

I. INTRODUCTION

In college, face-to-face and online learning become two core learning [1]. Advances in information technology today have offered benefits for lecturers and teaching staffs to improve the learning process through online learning [2]. Some experts are convinced that students' achievements will increase when they use technology wisely. Furthermore, learning will be more effective and efficient [3]. In other words, to bring forward the domain of higher education, they try to find the latest learning model [4]. The learning model is a combination of online and face-to-face learning, where both learning methods share the same portion [5] [6]. The term learning with activities like this is well known as "blended learning" [7].

Several higher education institutions see this model positively because they believe that it will result in high achievement, flexibility, efficient learning, and satisfaction for students [8]. Many studies have examined and compared blended learning to fully online learning and classroom learning with the aim to assess students' satisfaction and achievement [9]. Moreover, in blended learning, several psychological aspects of students should not be avoided because it will affect their learning later [10]. At the State University of Yogyakarta, some study programs have implemented this system. Undoubtedly, there are many perceptions about obstacles and satisfaction in applying this model. Therefore, this study aims to look at the perceptions and achievements of postgraduate students, especially in their level of satisfaction, convenience, and achievement in blended learning.

II. LITERATURE REVIEW

The results of some research studies show that students's satisfaction in the online learning system is high because they can interact and work together with their friends through this system. They can also reflect the characteristics and quality of learning during the blended learning system [11]. In other studies, however, student learning satisfaction has differed levels depending on their learning styles and backgrounds. Some students may feel that particular learning models are compatible with them, while others may be different [12]. However, students who receive blended learning are satisfied because they can enroll in other lectures with the blended learning system [2]. The format of this system emphasizes independent learning so that it can improve self-motivation, time management, and minimize psychological burdens [13]. Several factors influence the level of student satisfaction with blended learning, including social environment and cognitive factors [14].

In general, blended learning provides easier access to explore knowledge [15]. One concept that provides an opportunity for all students to express their opinions is by online discussion. Before expressing opinions, students collect information from various sources to improve the quality of their arguments [16]. Therefore, students have their thorough perspectives that may not need to be expressed during face-to-face learning [17]. Students' involvement becomes a crucial element for learning to succeed [18]. When blended learning is implemented, some students feel isolated [19]. The involvement of more active students will improve the achievement and level of satisfaction with blended learning. By implementing online discussion, they will become more responsible in learning [9].

Meanwhile, the relationship between learning and achievement depends on the students learning goals and mastery of the material. Students with high achievement will be willing to spend time studying the materials

deeper, at least in the blended learning system. Therefore, motivation affects this matter [20]. Students who use the blended learning system have an orientation to time efficiency and are more involved in discussions, and usually have better academic performance [21].

The researcher investigated the perceptions and achievements of postgraduate students at UNY on blended learning, especially regarding the levels of satisfaction, convenience, and involvement.

III. METHOD

This study involved postgraduate students of Yogyakarta State University of 2018 spread across various study programs that have applied blended learning in their classrooms. In this study, the sample consists of 123 respondents. The instruments of data collection in this study include documentation and online questionnaires through Google forms which links were distributed through Whatsapp to respondents. The questionnaire was adapted from survey questions compiled by Owston et al. (2013). Furthermore, the researcher also added several questions based on field conditions. The questions are based on four criteria, including students convenience, involvement, and level of satisfaction with blended learning, and student achievement in subjects using the blended learning system.

Questions associated with the perception of blended learning consisting of 27 items using a Likert scale (Strongly Agree, Agree, Neutral, Disagree, Strongly Disagree). Five questions are multiple choices in the form of college preferences and the number of working hours and two items of questions is in the form of short answer that is used to determine the value of the blended learning course, and the Cumulative Achievement Index (GPA).
The collected data was analyzed using Statistics software (SPSS) version of 22. Data analysis was done with a descriptive model.

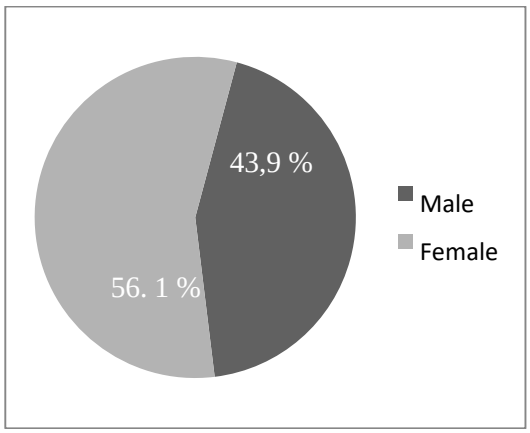
IV. RESULTS AND DISCUSSION

In the reliability test, the Cronbach Alpha coefficient of the 27 items obtained was 0.893, which indicates that this reliability category is relatively high.This research study explores the perceptions of postgraduate students at UNY, their GPA, and their grades in subjects that apply blended learning.

Blended learning is chosen as a way to utilize the existing classrooms efficiently, to provide greater convenience to students, to involve more students, and to improve student learning. Four types of related research questions were developed to assess students' perceptions of blended learning.

In this study, the percentage of respondents who filled out the questionnaires was 56.1% females and 43.9% males. Most postgraduate students at UNY obtain A score (72.4%) compared to the scores below (A-, B+, and B) in the blended learning system. It is different from the results of a study conducted by C. Bidder et al. which stated that the majority of students obtained the highest score of B+, followed by B, A-, A, and C. The lowest percentages of the scores were on B- and C +.

Fig. 1. Respondent percentage



As shown in Figure 1, more than half of the respondents were women. It can be seen that the smallest score obtained by the students was B, with a percentage of only around 1.6%. In other words, there were no students (respondents) who failed during college with blended learning. These results are in line with the majority of 97.6% of students' GPAs, which are above 3.30 and those with the highest GPA (4.00) of around 2.4% of the total respondents. The results of research conducted by Dziuban et al. (2006) show that students get a slightly higher overall achievement with the blended learning system.

Fig. 2 . Student's Grade in Blended Learning Course

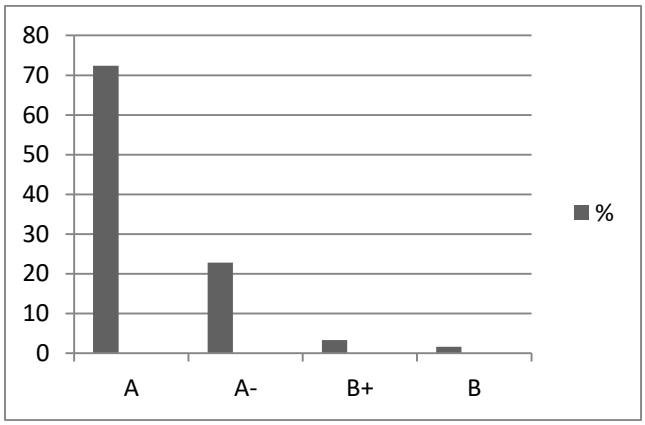
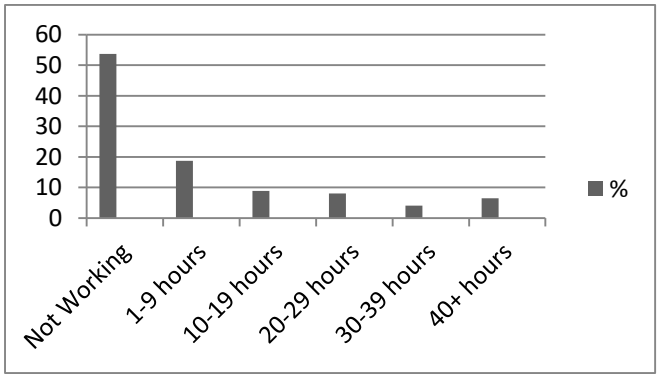


Fig.3 Total Hours per Week



Besides, as shown in Figure 3, about half of the total respondents did not work during their period of study. It

contrasts with the number of students who work more than 40 hours per week (6.5%) when they study.

A. Students' Perception of Their Satisfaction in Blended Learning

In general, postgraduate students give a positive response by feeling quite satisfied with the blended learning system. The majority of them (59.3%) tend to choose lectures with the blended learning system compared to the direct face-to-face system or just download learning videos through online learning. The same thing can be seen when they are faced with the same subject, but they can choose a different format, so they still choose a combination of online and face-to-face lectures (74.8%). Even in the future, most respondents answered that they agree that they would continue to take lectures with the blended learning system. It is in line with the findings of study by Owston et al. which found that students who had high quality were satisfied with blended learning and would take courses with the system once more, and were more likely to choose lectures with blended learning compared to full online or face-to-face lectures [8] It is also in line with the research results of Castle & McGuire (2010) that students feel satisfied with lectures with blended learning rather than with a traditional system.

TABLE I. PERCEPTION OF SATISFACTION IN BLENDED LEARNING

Item	Response Mean[a]	η^2
Overall, I am satisfied with the blended learning system	3.626	0.057
If given the opportunity, I will take other courses in the future with a blended learning system that is online and face to face	3.837	0.029
The experience of learning through blended learning has increased my chance to explore further study material	3.707	0.056
Learning with this system has increased my understanding of key concepts	3.276	0.149
I have strong time management skills	3.431	0.017
I am motivated to succeed	4.228	0.137

[a]Based on Likert Scale where 1 = Strongly Disagree and 5 = Strongly Agree

As shown in table 1, there is a high size effect for two items (item 4 and 6). Postgraduate students have a good understanding of the core concept understanding of learning through this blended learning system. In addition, they agreed that they were very motivated to achieve success. The size effect on these two items have a slight difference from the results of the study by C. Bidder et al. (2016) in which the size effect of the two items in their study is in the relatively intermediate category in which high-class students have a positive perception in understanding core concepts of the subjects studied and they have a sense of optimism in motivating themselves to succeed [2]. Meanwhile, low class students tend to be hesitant in understanding the core concepts and self-regulation in motivating themselves to succeed. In addition, other items are categorized as medium and low size effects in the category of perceptual satisfaction of postgraduate students in conducting blended learning courses.

B. Students' Perception of Convenience in Blended Learning

As shown in table 2, three items have a high size effect (items 2, 4, and 8). In general, the responses of the majority of respondents showed that they agreed that blended learning affects travel time to campus to be more efficient. This result is different from the research results conducted by Owston et al. (2013) which has a medium size effect on the statement that blended learning reduces travel time and costs [8].

TABLE II. PERCEPTION OF CONVENIENCE IN BLENDED LEARNING

Item	Response Mean[a]	η^2
Offering convenience because it doesn't have to come to campus often	3.870	0.021
Streamline travel time and costs towards campus	3.959	0.153
I feel connected with other students in this study	3.114	0.095
I feel isolated during learning	3.211	0.135
I was overwhelmed with learning and assignments given	2.626	0.016
I have difficulty using besmart when learning takes place	3.300	0.103
This lecture with a blended learning system requires more time and effort	2.935	0.033
Video lecture material that I can access greatly helps me in understanding the lesson	3.837	0.170

aBased on likert scale where 1 = strongly disagree and 5 = strongly agree for possitive item, and 1 = strongly agree and 5 = strongly disagree for negative item

In addition, the highest size effect seen from the results of the lecture material items through videos related to the lecture can help them to understand it easily. The opposite occurs in negative items with a high size effect, which is the feeling of isolation during the blended learning takes place. However, not all respondents agree on this, it can be seen from the response of the average respondent at a neutral level. Again, Owston et al. (2013) found a different result that the size effect obtained from this item is medium [8].

There are concerns that the majority of postgraduate students agree that blended learning provides convenience because they do not have to come to campus regularly. However, the size effect of this item is in the small category. Other literature results, from Melton's research, et al. (2009), showed that students who take courses with blended learning feel higher quality of learning than when they attend face-to-face learning.

C. Students' Perception of Involvement in Blended Learning

Students' involvement is an important thing in learning, one of which is discussion activities. Of 47.2% of students choose a combination of discussions both in class and online, this is about 4% higher of those who choose discussion only in class.

TABLE 3. PERCEPTION OF ENGAGEMENT IN BLENDED LEARNING

Item	Response Mean[a]	η^2
The online and face-to-face learning components enhanced each other	3.837	0.018
The Besmart site is well organized and easy to navigate	3.642	0.022
The features available at Besmart are very helpful and effective	3.675	0.008
The learning plan is explained in the course / lesson plan information at Besmart	3.821	0.016
The blended learning method has been explained by the lecturer	3.772	0.061
Assessment of assignments and examinations collected through the Besmart page has been carried out and displayed	3.504	0.024
Makes me more actively involved in learning (discussion, etc.)	3.138	0.005
Make it easier for me to ask questions more often in learning	3.252	0.004
I feel that the amount of my interactions with other students in the discussion of learning is increasing	2.927	0.032
I feel that the quality of my interactions with other students in this learning is getting better	3.057	0.135
I feel the number of my interactions with the relevant subject has increased	3.122	0.030
I feel the quality of my interaction with the relevant subject has increased	3.301	0.003
I feel more anxious / worried about the blended learning system	3.073	0.033

[a]Based on likert scale where 1 = strongly disagree and 5 = strongly agree for possitive item, and 1 = strongly agree and 5 = strongly disagree for negative item

In the perception of this involvement, the only highest size effect can be seen in the better quality of their interactions with other students. It is in line with Jusoff's findings (2009) which stated that with blended learning, students can be closer with other friends [6]. This is contrary to the findings by Owston et al. (2013) in which these items are in the moderate category [8]. Meanwhile, other items show a low size effect (except item 5 which has a moderate effect). Then, it is followed by a medium size effect ($\eta 2 = 0.061$) with the average student who agree that the blended learning method was explained earlier by the lecturer.

The thing to note is in item 1 which shows a low size effect ($\eta 2 = 0.018$), but the average response of the students agrees that the components in online and face-to-face learning support each other. This finding is different from the findings of C. Bidder et al. (2016) which has a relatively high size effect on this item [2].

V. CONCLUSION

Blended learning is a combination of online and face-to-face learning systems. This study examines the perceptions of postgraduate students and their achievements in the blended learning system during their lecture period.

In general, the perceptions of postgraduate students of UNY who are satisfied with the blended learning system are at a sufficient level. Using this system, they can understand the core concepts of learning. In addition, they are always motivated to succeed. While in the convenience category, they respond positively to the benefits of blended learning such as the efficiency of travel time to campus, and video lecture material is more helpful in learning. Negative items that require special attention and have a high size effect are difficulties in using *be-smart* as a learning site, and they also feel isolated during blended learning.

While for their involvement in blended learning, almost all items have a low size effect on their achievement. The only thing that has a high size effect on their achievement is that the quality of their interactions with fellow friends is better since the blended learning course is conducted. Other options in increasing students' involvement in blended learning need to be analysed immediately, so that blended learning in postgraduate lectures can be better.

REFERENCES

[1] lY. Chou and D. C. Chou 2011 *Course Management Systems and Blended Learning: An Innovative Learning Approach* (Decis. Sci. J. Innov. Educ.,.)
[2] C. Bidder, S. H. Mogindol, T. C. Saibin, S. A. Andrew, and N. Naharu 2016 *Students' Perceptions of Blended Learning and Achievement* (Envisioning the Future of Online Learning)
[3] J. Lei 2010 *Quantity versus quality: A new approach to examine the relationship between technology use and student outcomes* (Br. J. Educ. Technol.)
[4] E. Martínez-Caro and F. Campuzano-Bolarín 2011 *Factors affecting students' satisfaction in engineering disciplines: traditional vs. blended approaches* (Eur. J. Eng. Educ.)
[5] J. H. Wu, R. D. Tennyson, and T. L. Hsia 2010 *A study of student satisfaction in a blended e-learning system environment* (Comput. Educ.)
[6] K. Jusoff and R. Khodabandelou 2009 *Preliminary Study on the Role of Social Presence in Blended Learning Environment in Higher Education* (Int. Educ. Stud.)
[7] J. Fleck 2012 Blended learning and learning communities: Opportunities and challenges (J. Manag. Dev.)
[8] R. Owston 2013 *Blended learning policy and implementation: Introduction to the special issue* (Internet and Higher Education)
[9] B. F. Melton, H. W. Bland, and J. Chopak-foss 2009 *Achievement and Satisfaction in Blended Learning* (*Int. J. Scholarsh. Teach. Learn.*)
[10] J. Poon 2012 Use of blended learning to enhance the student learning experience and engagement in property education (Prop. Manag)
[11] M. J. Kintu, C. Zhu, and E. Kagambe 2017 *LEARNER SATISFACTION AND KNOWLEDGE CONSTRUCTION IN BLENDED LEARNING* (INTED2017 Proceedings)
[12] C. C. Lo 2012 How Student Satisfaction Factors Affect Perceived Learning (Journal of the Scholarship of Teaching and Learning)
[13] H. J. So and T. A. Brush, "Student perceptions of collaborative learning, social presence and satisfaction in a blended learning environment: Relationships and critical factors," *Comput. Educ.*, 2008.
[14] J. H. Wu, R. D. Tennyson, and T. L. Hsia 2010 *A study of student satisfaction in a blended e-learning system environment* (Comput. Educ.)
[15] L. L. Hsu 2011 Blended learning in ethics education: A survey of nursing students," (Nurs. Ethics)
[16] A. M. Bliuc, R. A. Ellis, P. Goodyear, and L. Piggott 2011 *A blended learning Approach to teaching foreign policy: Student experiences of learning through face-to-face and online discussion and their relationship to academic performance* (Comput. Educ.)

[17] M. M. N. Hassan Ja'ashan 2015 *Perceptions and Attitudes towards Blended Learning for English Courses: A Case Study of Students at University of Bisha* (English Lang. Teach.)
[18] J. Page, T. Meehan-Andrews, N. Weerakkody, D. L. Hughes, and J. A. Rathner 2017 *Student perceptions and learning outcomes of blended learning in a massive first-year core physiology for allied health subjects* (Adv. Physiol. Educ.)
[19] S. Smyth, C. Houghton, A. Cooney, and D. Casey 2012 *Students' experiences of blended learning across a range of postgraduate programmes* (Nurse Educ. Today)
[20] M. Paechter, B. Maier, and D. Macher 2010 *Students' expectations of, and experiences in e-learning: Their relation to learning achievements and course satisfaction* (*Comput. Educ.*)
[21] Jung-Chuan Yen and Chun-Yi Lee 2011 *Exploring problem solving patterns and their impact on learning achievement in a blended learning environment* (Comput. Educ.)
[22] Dziuban, C., Hartman, J., Juge, F.,Moskal, P., & Sorg, S. 2006 *Blended learning enters the mainstream. In C. J. Bonk, & C. R. Graham (Eds.),* (San Francisco: The handbook of blended learning: Global perspectives, local designs) pp. 195–208
[23] Castle, S. R., & McGuire, C. J. 2010 *An analysis of student self-assessment of online, blended, and face-to-face learning environments: Implications for sustainable education delivery* (International Education Studies) p 36–40.
[24] Melton, B., Graf, H., & Chopak-Foss, J 2009 *Achievement and satisfaction in blended learning versus traditional general health course designs* (International Journal for the Scholarship of Teaching and Learning)