# The Learning Styles of Prospective Biology Teachers at Islamic University in Indonesia

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**Submission date:** 24-Mar-2022 10:35AM (UTC+0700)
**Submission ID:** 1791501369
**File name:** Second_Document_-_Investigating_of_Learning_Styles.docx (51.84K)
**Word count:** 6243
**Character count:** 37165

# The Learning Styles of Prospective Biology Teachers at Islamic University in Indonesia

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**Abstract.** The purpose of this study was to investigate the learning styles of prospective biology teachers in Islamic universities (PBTs-IU) in Indonesia during the Covid-19 pandemic. 195 PBTs-IU was surveyed by using The Felder-Silverman Learning Style (FSLS) instruments. The result of this study was found that the learning style of PBTs-IU during pandemic covid-19 likes active-social oriented learning styles, sensing-existing ways, concrete material, careful with details, visual-pictures and sequential-sequential progress. This study suggested that teachers concern about the learning style of the students to conduct teaching and learning in the classroom.

**Keywords**: *prospective biology teachers in islamic universities (PBTs-IU), Felder-Silverman Learning Style (FSLS), active/reflective, sensing/intuitive, sequential/global and visual/verbal.*

## Introduction

As of 15th April 2020, The covid-19 pandemic has caused 191 countries had closed their schools affecting 1.6 billion children. Unesco (2020) has stated that Unesco has stated that numerous challenges in doing such students not having have access to the internet or certain devices and teachers being unfamiliar with remote-learning solutions. Entering the period of August 2020, the Covid-19 pandemy has shown an increase in the number of infections. Based on data released by the Indonesian Covid-19 task force, in August the number of infected Indonesians was 120,456 thousand people. This figure continues to increase until August with the number of infected patients amounting to 225,030 people. Based on the rapid analysis that has been carried out on media content, from speeches and government reports, social platforms and mass media, the results of the analysis show that the Covid-19 pandemic in Indonesia has been predicted to last a long time (Djalante et al., 2020). These conditions have forced the Indonesian ministry of national education to continue to impose distance learning for every level of education. Based on official information, the Ministry of Education and Culture (Kemendikbud) has currently prepared learning scenarios, including encouraging online learning for students. One of the learning programs that have been implemented is a learning program that also accommodates online learning. Online learning programs with independent learning are very appropriate to be applied during the Covid-19 pandemic (Abidah et al., 2020). Thus, online learning with various platforms, such as google classroom, is the most preferred application for use in learning.

### *Learning with Google Classrooms*

In the 21st century, educators in higher education should use LMS in the learning process as a form of learning transformation from traditional systems to e learning. The learning management system (LMS) is a virtual learning environment (VLN) that is used to deliver

course material, track progress, and conduct assessments for e-learning (Reshad, 2018). The concept of what an LMS is and the full scope of its use continues to expand, driven by the ubiquitous access to the Internet and continued exploration in social networks, media, and games as spaces for learning and collaboration (Reshad, 2018). Finally, Learning Management Systems (LMS) represent one of the main technology to support learning in HE institutions (Abazi et al., 2018).

Google Classroom (GC) has provided affordances for blended learning in higher education (Kumar et al, 2020). Its suggested exploring how GC is perceived and adopted in higher education. Also The benevit of LMS with GC was Google Classroom increased student participation and learning and improved classroom dynamics (Heggart & Yoo, 2018); the adaptation of GC in higher education (Kumar et al., 2020). GC can make better access to learning material and supplementary teaching resources, helpfulness of immediate feedback, and learning outside of class environment were reported by students (Dash, 2019)

Intention to use a LMS is affected from perceived usefulness, perceived ease of use and social norm. At the same time, perceived usefulness is affected from perceived ease of use, social norm and user interface design and perceived ease of use is affected from user interface design and computer self-efficacy (Yalcin & Kutlu, 2019). Learning Management Systems (LMS) with Google Classroom represent one of the main technology to support learning in HE institutions (Abazi-Bexheti et al., 2018). Leadership and top management of higher education institutions should focus more on ICT infrastructure, LMS usage skills/training, LMS quality related issues, support and ICT policy formulation (Bervell & Umar, 2017). E-Learning facility like Google Classroom efffectively helpfull in classroom learning (Bhat et al., 2018). Google Classroom increased student participation and learning and improved classroom dynamics (Heggart & Yoo, 2018). Google Classroom increased student participation and learning and improved classroom dynamics (Brown, 2018).

Learning with google classrooms in Indonesia shows that learning has been well managed by the teacher, where students have high learning independence and moderate critical thinking skills (Rahmad et al., 2019). Furthermore, the use of google classroom in Indonesia has also been used to improve the quality of learning (Sudarsana et al., 2019). These findings can be seen from the results of investigations about learning during the Covid-19 pandemic that have been carried out by Rahiem (2020; 2021). The results of these investigations have shown that the student's learning experience and outcomes are good after using WhatsApp and Google Classroom. However, the study findings need to be proven by conducting other studies. Thus, this study proves that the use of google classroom and social media WhatsApp during the pandemic in Indonesia can also be well received by prospective biology teacher students (PBTs) at the Islamic University in Indonesia.

***The Felder and Silverman Learning Styles***

The Felder and Silverman Learning Styles Model has been selected as the most appropriate model for open learning (Fasihuddin et al., 2017) and technology based learning systems (Deborah et al., 2014). Then, El-Bishouty et al. (2019) explore the use of Felder and Silverman learning style for online course design, and the study has demonstrated the validity of the course analyzer tool at the cohort level and shed light on how the course can be improved. Cheng (2014) has used the Felder-Silverman questionnaire to investigate students' learning styles in relation to their acceptance and attitudes towards the use of supporting tools for learning in higher education. liked the verbal communication feature in the lesson. Shaw (2012) conducted study is focused on the relationships among learning styles, participation types, and learning performance for programming language learning supported by an online forum and this studi showed that supported with online forums and students' active participation, and increases learning performance as measured by student learning scores. Jena (2018) has conducted

research to develop a model used to detect student learning styles, and the findings of this study show that by using social media, the Felder-Silverman learning style can be used to detect these student learning styles. However, this explanation shows that there has not been any research on the use of the Felder-Silverman Learning Style in the field of biology learning at Islamic Universities.

The study of learning style in Indonesia was found to have been carried out by previous researchers. Widharyanto and Binawan (2020) has conducted was conducted to describe the students' learning style from the two elements of Java, Papua, Flores, Dayak, and Batak ethnics, and the result of the study showed that finding reveals some similarities and unique differences in their learning style and learning strategy. Ghufron & Suminta (2020) examine the influence of the epistemic beliefs that consist of belief in knowledge and belief in learning on field-dependent and field-independent learning styles, and the result of the study showed that the belief in learning has a significant and positive effect on the field-dependent and field-independent learning style. Zulfiani et al. (2020) determine students' profiles of learning styles, levels of higher-order thinking skills, and the effect of differences in students' competence to various hots instruments using the science adaptive assessment tool application, and the result of the study showed that the achievement of the HOTS score was influenced by the type of learning styles, even though it had averaged a very small correlation. However, this explanation also shows that there has not been any research on the use of the Felder-Silverman Learning Style in the field of biology learning at Islamic Universities.

***Integrated Learning at Islamic University in Indonesia***

Islamic university in Indonesia has been applied the integreted learning (Decision of Directorate General of Islamic Education Ministry of Religion of the Republic of Indonesia Number 2498, year 2019). The using of integrated instruction has applied in IAIN Batusangkar, and the study about the using of integrated instruction was conducted by by Haviz (2016) and Haviz et al. (2012). This instruction also was improved student achievement in 21st century skill (Haviz et al., 2018; Haviz, 2020; Haviz & Maris, 2020**;** Haviz et al., 2020a**;** Haviz et al., 2020b**;** Haviz et al., 2020c). But, since pandemic covid-19 integrated learning move on from face-to-face learning to online learning. However, this study will investigate that the change of the learning assumed cause the learning style of PBTs-IU.

***Aims and Research Question***

This study was to investigate the learning styles of prospective biology teachers in islamic university (PBTs-IU) during pandemic covid-19. This study explores the problems (a) what is semantic groups associated with the index of learning styles question for PBTs-IU? (b) what is the most representative question for each dimension of the learning style according to frequencies analysis for PBTs-IU?

## Methods

***Research Design and Participants***

This study used a survey mixed method, with an explanatory sequential design (Creswell, 2014). Data were obtained from 195 prospective biology teachers in Islamic University (PBTs-IU) who are studying at the Biology Education Department of IAIN Batusangkar, West Sumatra, Indonesia. These PBTs-IU come from six different classes. The number of male students is 19 people and the number of female students is 176 people. The participants have ages 18 to 22 years, with an average age of 18.5 years. The distribution of participants in four

grade was first grade (*N*=56 PBTs-IU), seconds grade (*N*=45), thirds grade (*N*=51) and fourth grade (*N=43*).

***Data Collection***

The PBTs-IU have studied online learning at three subject; scientific literacy, scientific writing and research methodology. This online learning has been carried out using whastApp, google classroom and googlemeet as learning media. The PBTs-IU studied for 16 meetings and were taught by the same lecturers. The lecturer has designed the learning material then uploads it to Google Classroom. So, that PBTs-IU can study the material before the learning process is carried out. Online face-to-face meetings were conducted using google meet for 4 meetings, namely meetings 1, 7, 10, 15, and other meetings were held with the googleclassroom. Communication and interaction between lecturers and students has been carried out with the WhastApp.

***Instruments***

The FSLS instrument was used to collect the data. This instrument contains eight pairs of learning styles; active-reflective, sensing-intuitive, visual-verbal, sequential-global. These four pairs of learning styles have one or more semantic groups, and each semantic group is described in several questions. The total number of questions is 44 questions (*Table 1*).

Table 1
*Instrument of Semantic Groups Associated with the Index of Learning Styles (ILS) Question*

| Style | Semantic Group | ILS Question (answer a) | Style | Semantic Group | ILS Question (answer b) |
|---|---|---|---|---|---|
| Active | trying something out | 1, 17, 25, 29 | Reflective | think about material | 1, 5, 17, 25, 29 |
| | social oriented | 5, 9, 13, 21, 33, 37, 41 | | impersonal oriented | 9, 13, 21, 33, 37, 41 |
| Sensing | existing ways | 2, 30, 34 | Intuitive | new ways | 2, 14, 22, 26, 30, 34 |
| | concrete material | 6, 10, 14, 18, 26, 38 | | abstract material | 6, 10, 18, 38 |
| | careful with details | 22, 42 | | nor careful with details | 42 |
| Visual | Pictures | 3, 7, 11, 15, 19, 23, 27, 31, 35, 39, 43 | Verbal | spoken words | 3, 7, 15, 19, 27, 35 |
| | | | | written words | 3, 7, 11, 23, 31, 39 |
| | | | | difficulty with visual style | 43 |
| Sequential | detail oriented | 4, 28, 40 | Global | overall picture | 4, 8, 12, 16, 28, 40 |
| | sequential progress | 20, 24, 32, 36, 44 | | non sequential progress | 24, 32 |
| | form parts to the whole | 8, 12, 16 | | relations/connections | 20, 36, 44 |

From: Graf et al. (2007)

***Validity, Reability and Analyzing of Data***

In this study, we have conducted the validity and reliability test. The validity content was conducted by three expert. The result of the study showed that the instrument was valid with a simple revision. The revision about the using of word and number on item. The instrument was revision before used to colletc the data. The reliability test was conducted by using Cronbach's

Alpha. The score of Cronbach's Alpha for FSLS are: *active/reflective* = 0.50, *sensing/intuitive* = 0.53, *visual/verbal* = 0.62 and *sequential/global* = 0.53. The descriptions of the results of this study was showed that the ILS instrument is suitable for investigating PBTs-IU learning styles.

The data obtained were analyzed using descriptive statistics. Interviews were conducted with 28 PBTs-IU (8 men and 20 women). Interviews were conducted after learning was completed. Interview questions adapted to the four dimensions of FSLS: active/reflective, sensing/intuitive, sequential/global and visual/verbal.

## Findings

### *Semantic Group Assosiated with the Index Learning Style for PBTs-IU*

Table 2 showed that the score of learning styles for PBTs-IU was found to be> 50%. This finding also showed that the highest score of learning styles for PBTs-IU was found among students of class 2016 with learning style sensing with the semantic group of existing ways (72.6). The lowest score of learning styles for PBTs-IU was found in students of class 2019 with an intuitive learning style with semantic group not careful with details (9.3) and verbal learning style with semantic group difficulty with visual style (9.3).

Table 2
*Semantic Groups Associated with the Index of Learning Styles for PBTs-IU*

| Style | Semantic Group | Score of learning styles for PBTs-IU (%) | | | |
|---|---|---|---|---|---|
| | | 2016 (*N=56*) | 2017 (*N=45*) | 2018 (*N=51*) | 2019 (*N=43*) |
| Active | Trying something out | 46.43 | 48.89 | **51.76** | **50.7** |
| | Social oriented | **66.67** | **62.22** | **59.48** | **68.99** |
| Reflective | Think about material | **53.57** | **51.11** | 47.06 | 49.3 |
| | Impersonal oriented | 27.38 | 37.78 | 40.52 | 29.46 |
| Sensing | Existing ways | **72.6** | **64.44** | **66.01** | **54.26** |
| | Concrete material | **50.6** | **68.15** | **65.36** | **66.67** |
| | Careful with details | **67.86** | **68.89** | **61.76** | **65.12** |
| Intuitive | New ways | 39.29 | 42.59 | 45.1 | 48.45 |
| | Abstract material | 29 | 22.22 | 24.51 | 25 |
| | Not careful with details | 25 | 15.56 | 17.65 | 9.3 |
| Visual | Pictures | **64.12** | **62.42** | **62.75** | **66.38** |
| Verbal | Spoken words | 36.61 | 37.04 | 39.87 | 37.6 |
| | Written words | 41.96 | 51.11 | 40.52 | 38.37 |
| | Difficulty with visual style | 16.07 | 13.33 | 17.65 | 9.3 |
| Sequential | Detail oriented | 31 | 26.67 | 37.25 | 27.13 |
| | Sequential progress | **67.86** | **69.33** | **61.57** | **71.63** |
| | From parts to the whole | 43.5 | 39.26 | 52.29 | 51.16 |
| Global | Overal picture | **62.8** | 40.11 | 37.76 | 40.01 |
| | Non-sequential progress | 14.29 | 8.89 | 17.65 | 6.98 |
| | Relations/connections | 39.3 | 45.19 | **52.29** | 42.64 |

The results of this study indicatet that PBTs-IU that have a score of learning> 50% have been found in active learning styles with semantic social oriented. The semantic social-oriented score was 66.67; 62.22; 59.48 and 68.99. The results of the same study also showed that PBTs with a score of learning> 50% were found in style learning sensing. All semantic sensing has a score> 50%. For example, the score for existing ways is 72.6; 64.44; 66.01 and 54.26. The score for concrete material is 50.6; 68.15; 65.36 and 66.67. Score for careful with details is 67.86; 68.89; 61.76 and 65.12. The same results were also found in visual learning styles with semantic pictures. On the semantic pictures, the score of learning PBTs was found to be 64.12;

62.42; 62.75 and 66.38. The same research results were also found in sequential style learning, with semantic sequetial progress. The score for this semanatic is 67.86; 69.33; 61.57 and 71.63. These explanations have shown that the semantic group is associated with the index learning style for PBTs were active-social oriented, sensing-existing ways, concrete material, careful with details, visual-pictures, and sequential-sequential progress.

***The Most Representative Question for Dimension of the Learning Style According to Frequencies Analysis***

The result about the most representative question for each dimension of the learning style according to the frequency analysis for PBTs-IU was written in Table 3.Table 3 was explained that there are five rankings in each syle of learning with 195 PBTS people filling out the questionnaire.

In the active / reflective style, ranks 1-5 have been found in semantic social oriented. All scores are> 50%. The highest score (97.78) was found in question "21. I prefer to study; (a) in a study group ". The lowest score (88.37) is found at "13. In classes I have taken; (a) I have usually gotten to know many of the students". These findings show that all PBTs-IU like a social oriented learning style.

In sensing / intuitive style, semantic concrete material, learning style question in rank 1 and 2 is "18. I prefer the idea of; (a) certainty (91.11; 90.7) ". Another semantic finding is careful with details, with learning style question 42. When I am doing long calculations; "(A) I tend to repeat all my steps and check my work carefully (90.7; 84.44 and 82.35)". These findings show that PBTs-IU likes the concrete material learning style and be careful with details.

In the visual / verbal style, semantic pictures were in the rank 1 - 5.The highest score of learning style question is found at "19. I remember best; (a) what I see (93.33). Then followed by a learning style question "43. I tend to picture places I have been; (a) easily and fairly accurately (90.7). The last ranking is learning style question "11. In a book with lots of pictures and charts, I am likely to; (a) look over the pictures and charts carefully (86.05) ". These findings show that PBTs-IU like the picturers learning style.

In Sequential / Global, semantic sequential progress has been found at rank 1-5. Score learning style question ranking 1 has been found at "32. When writing a paper, I am more likely to; (a) work on (think about or write) the beginning of the paper and progress forward (95.35) ". This learning query style was also found in rank 2 (95.35) and rank 5 (88.24). Another learning style question found in rank 3 and 4 (91.11; 90.7) is the sequential progress is "24. I learn; (a) at a fairly regular pace. If I study hard, I'll "get it.". These findings suggest that PBTs-IU favor sequential progress. These explanations have shown that the most representative question for each dimension of the learning style according to frequencies analysis were active-social oriented, sensing-concrete material dan careful with details, visual-picturers dan sequential-sequential progress.

Table 3
*The Five Most Representative Question for Dimension of the Learning Style According to Frequencies Analysis for PBTs-IU*

| Style | Rank | Semantic Group | Learning Style Question | % |
|---|---|---|---|---|
| Active / Reflective | 1 | social oriented | 21. I prefer to study; (a) in a study group | 97.78 |
| | 2 | social oriented | 9. In a study group working on difficult material, I am more likely to; (a) jump in and contribute ideas | 97.67 |
| | 3 | social oriented | 13. In classes I have taken; (a) I have usually gotten to know many of the students | 96.08 |
| | 4 | Social oriented | 13. In classes I have taken; (a) I have usually gotten to know many of the students | 92.86 |

| | | | | |
|---|---|---|---|---|
| | 5 | social oriented | 13. In classes I have taken; (a) I have usually gotten to know many of the students | 88.37 |
| Sensing / Intuitive | 1 | concrete material | 18. I prefer the idea of; (a) certainty | 91.11 |
| | 2 | concrete material | 18. I prefer the idea of; (a) certainty | 90.7 |
| | 3 | careful with details | 42. When I am doing long calculations; (a) I tend to repeat all my steps and check my work carefully | 90.7 |
| | 4 | careful with details | 42. When I am doing long calculations; (a) I tend to repeat all my steps and check my work carefully | 84.44 |
| | 5 | careful with details | 42. When I am doing long calculations; (a) I tend to repeat all my steps and check my work carefully | 82.35 |
| Visual / Verbal | 1 | Pictures | 19. I remmeber best; (a) what I see | 93.33 |
| | 2 | Pictures | 43. I tend to picture places I have been; (a) easily and fairly accurately | 90.7 |
| | 3 | Pictures | 19. I remmeber best; (a) what I see | 89.3 |
| | 4 | Pictures | 43. I tend to picture places I have been; (a) easily and fairly accurately | 86.67 |
| | 5 | Pictures | 11. In a book with lots of pictures and charts, I am likely to; (a) look over the pictures and charts carefully | 86.05 |
| Sequential/ Global | 1 | sequential progress | 32. When writing a paper, I am more likely to; (a) work on (think about or write) the beginning of the paper and progress forward | 95.35 |
| | 2 | sequential progress | 32. When writing a paper, I am more likely to; (a) work on (think about or write) the beginning of the paper and progress forward | 91.11 |
| | 3 | sequential progress | 24. I learn; (a) at a fairly regular pace. If I study hard, I "get it." | 91.11 |
| | 4 | sequential progress | 24. I learn; (a) at a fairly regular pace. If I study hard, I "get it." | 90.7 |
| | 5 | sequential progress | 32. When writing a paper, I am more likely to; (a) work on (think about or write) the beginning of the paper and progress forward | 88.24 |

The results of the interview are in line with the findings of research that has been conducted using quantitative methods. The result of interview showed that PBTs-IU prefer social oriented learning, concrete material, picture, and overal pictures. The transcript of the interview with PBTs about active / reflective learning styles is written below.

*Researcher: Your preferred learning style during the learning process in class? Can you explain?*

*PBTs-IU: I like studying together in class. Because in this way, I find it helpful to have explanations from some friends in class. If there is material that I don't understand or don't understand, then I will still ask other friends.*

The interview transcript shows that PBTs-IU likes a social learning oriented style. In the following section, an excerpt from the interview transcript has been written about the sensing / intuitive learning style.

*Researcher: Do you also provide concrete explanations when studying in class or simple explanations or just plain explanations?*

*PBTs-IU: Yes .. I really like the explanation of the material that is clear and more concrete, whether the explanation is from the lecturer or from friends in class. If not, I have a hard time mastering the subject matter. I need a more concrete explanation to master the subject matter.*

The transcript of the interview also shown that PBTs-IU also likes the concrete material learning style. In the following section, an excerpt from the interview transcript has been written about the visual / verbal learning style.

*Researcher: Do you also like visual or verbal learning styles? Do you like learning styles that use image media?*

*PBTs-IU: Yes .. I really like learning styles that are accompanied by clear visuals or material that is presented with pictures. For example, there are books with pictures, schemes or other diagrams. Because this carfa is easier to remember and understand.*

The transcripts of interviews have also shown that they like learning other pictorial or visual materials such as graphic schemes and others. In the following section, excerpts of interview transcripts about sequential / global learning styles have been written.

*Researcher: Do you like learning in sequential progress or overal pictures, such as a lecturer starting learning by asking you to write something first or the lecturer giving a clear outline of what you are going to do?*

*PBTs-IU: It really helps if the lecturer starts the lesson by giving a complete explanation of what I will do, such as writing down the material outline, material information outline or even the lecturer has prepared the material completely.*

The interview transcripts have also shown that PBTs-IU really like the overal pictures learning style. Because they answered the question by mentioning that they liked the lecturer who explained in full about what they were going to do. PBTs-IU also answered that they liked lecturers who explained the material completely. These answers show that there is an overal pictures learning style.

## Discussion

The results of this study showed that the digital transformation of teaching and learning is being accelerated by the Covid-19 lockdowns. This involves the rapid and widespread adoption of e-learning, as many schools, colleges and universities are closed – and teaching and learning is being widely accessed online (Rospigliosi, 2020). The crisis-response migration methods of universities, faculty and students, challenges and opportunities were discussed and it is evident that online learning is different from emergency remote teaching, online learning will be more sustainable while instructional activities will become more hybrid provided the challenges experienced during this pandemic are well explored and transformed to opportunities (Adedoyin & Soykan, 2020). Virtual Learning Environments (VLEs) are becoming commonplace in Higher Education (Herodotou et al., 2020).

The results of this study showed th studies on learning with Google Classroom during the pandemic in Indonesia show that the application of google classrooms as a learning platform for teaching can be applied and accepted by students, and the use of google classrooms has led to better student learning outcomes (Tinungki & Nurwahyu, 2020). The same results have also been found when social media, such as WhatsApp, are in the learning process. For example research conducted by Mumford and Dikility (2020) and Rasheed et al. (2020). Mumford and Dikilitas (2020) has investigated the growth of reflective thinking skills of prospective teachers, and the results of this study show that prospective teachers need guidance in using technology to encourage reflection in learning. Furthermore, the use of technology such as the use of social media is positively related to student involvement and student creativity in postgraduate research training (Rasheed et al., 2020; Kamal & Radhakrishnan, 2019).

The results of this study indicatet that the learning style of PBTs-IU has also changed due to the use of the Google Classroom platform. When associated with the Felder-Silverman

Learning Style, the findings of this study lead to the use of a visual-picture learning style. This finding is in line with the research conducted by Jafari and Abdollahzade (2019). The research has found that there is a relationship between the Felder-Silverman (FSLSM) learning style model and the type of game played with the media used when learning is carried out.

The results of this study also indicated that research on student learning styles is important to determine the direction of learning to be carried out by the teacher. Research on the development of learning styles is therefore in high demand (Moser & Zumbach, 2018). The results of this study indicated that differences in students have different learning styles and lead to the selection and use of learning strategies used by teachers. Because the students with different learning styles use different strategies to learn (Graf et al., 2010), and studying the learner model is important to determine the direction of educational research (Abyaa et al., 2019). The Felder and Silverman Learning Styles Model has been selected as the most appropriate model for open learning (Fasihuddin et al., 2017). the appropriate contents for users in an e-learning system based on their learning styles and personalities (Denphaisarn, 2014; Hsu, Chen & Hwang, 2020).

## Conclusion

This study was foud that the semantic group is associated with the index learning style for PBTs were active-social oriented, sensing-existing ways, concrete material, careful with details, visual-pictures, and sequential-sequential progress. This study was also found that the most representative question for each dimension of the learning style according to frequencies analysis were active-social oriented, sensing-concrete material dan careful with details, visual-picturers dan sequential-sequential progress. So, concluded that the learning style of PBTs-IU during pandemic covid-19 likes active-social oriented learning styles, sensing-existing ways, concrete material, careful with details, visual-pictures and sequential-sequential progress.

Based on result of the study, the using of the Felder and Silverman Learning Styles Model has been selected as the most appropriate model for open learning. Because this models has easily to use in the learning. Also, the teachers or lectures must be improve their teaching method to accomodate the students learning style. Because, student achievement also can be improve with concurence with students learning style.


## Acknowledgement

The authors gratefully acknowledge to all participants. This research was supported in part by funding from IAIN Batusangkar.


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