



## Differences in Profile and Personal Learning of Massive Open Online Courses (MOOCs) Participants in Utilizing Open Educational Resources (OER) and Parenting Programs

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**ABSTRACT:** Massive Open Online Courses (MOOCs) at the Indonesian Open University are independent learning tools that provide the opportunity to introduce the University to the wider community by providing quality knowledge for free. This research aims to describe the Indonesian Open University's efforts to provide solutions to limited access and quality of education by providing various free courses to the wider community through MOOCs which are open and can be attended by an unlimited number of participants. This survey study uses a modified Self-Regulated Learning (SRL) questionnaire, adapted to the profile of the community as participants and the characteristics of the Open University (UT) MOOCs program. In 2023, UT offers 23 MOOC titles, but this research limited it to only two MOOCs, Open Educational Resources (OER) with 56 participants and Parenting with 73 participants (129 teachers and parents of early childhood). This research revealed two MOOCs in real life which were analyzed using the Mann-Whitney U test to see whether there were differences in the answers between respondents who took part in the OER MOOCs and the answers of respondents who took part in the MOOCs parenting program. Apart from that, UT's MOOCs currently still use Indonesian considering that currently they are specifically for Indonesian people. UT MOOCs were developed using an open-source platform (Moodle) considering that previously lecturers and tutors had used similar platforms for their formal courses.

**Keywords:** self-directed learning, Massive Open Online Courses, parenting program, early childhood

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## 1 INTRODUCTION

A collection of ego web-based learning materials is known as a MOOCs (Janelli & Lipnevich, 2021; Wei et al., 2021). Corrado et al., (2021) state that MOOCs are just one of the many tools that ICTs for education may provide. MOOCs, which combine open education and eLearning, are a relatively recent phenomenon in the learning space (de Freitas et al., 2015). Making the distinction between MOOCs and eLearning is crucial. With fully online learning, electronic technology and digital media are being used to augment or even completely replace in-class educational experiences (Al-Rahmi et al., 2021) Conversely, MOOCs can only enhance a student's educational experience if they are not delivered by rigid regulations. When introducing MOOCs, important factors like funding, advertising, legal issues, scaffolding, learner connection, and alignment with learning objectives must all be considered (Magen-Nagar & Cohen, 2017). As the number of MOOC participants rises, MOOCs must ensure that people who have signed up continue to learn from the courses that are offered to them (Ma & Lee, 2020).

Numerous explanations have been found in earlier research to explain why people stop using MOOCs as a learning tool (Dai et al., 2020). When compared to what is anticipated of students, MOOCs completion rates are low, indicating a lack of self-control and motivation (Dai et al., 2020). Students become less productive as they work through the course material (Moore & Wang, 2021). Additionally, neither the efficacy of the instructional components nor the provision of finance or support for participant motivation or the development of social connections are guaranteed by these MOOCs (Hsu, 2021). Finally, MOOCs are based on students' commitment to their learning objectives, preexisting knowledge and skills, and group support (Cohen & Magen-Nagar, 2016; Gardner & Brooks, 2018). Even though MOOCs' advantages and disadvantages have been discussed (Aldowah et al., 2020; Singh & Sharma, 2021), MOOCs' impact on higher education institutions cannot be disregarded. Even though MOOCs' advantages and disadvantages have been discussed, MOOCs' impact on higher education institutions cannot be disregarded. Therefore, it is essential to investigate the benefits and viability of massive open online courses (MOOCs) as part of an academic program.

Based on data from the Central Statistics Agency, Indonesia's population in mid-2023 will be 278.69 people. Their employment status is ranked based on the highest number of fields of work, namely entrepreneurs, pupils and students, agriculture and animal husbandry, government officials, teaching staff (lecturers and teachers), pensions, fishermen and health. In everyday life, even though they already work in their respective fields, they always need new knowledge and skills, to improve the quality of their work and their quality of life. The Covid 19 pandemic has brought unfavorable economic conditions. Many companies have closed or reduced their staff. In the field of education, too, many are switching from classical and face-to-face learning models to distance and online learning. This condition makes people quite panicked, and they must change their way of life to face normal life during the pandemic (Singh & Sharma, 2021). This condition results in the need for people to have certain abilities. In the business sector, for

example, how to open a new business. Then the communications field requires abilities and skills in utilizing new applications. Often in the field of education digital literacy skills are needed for students who study and teachers or lecturers or teaching instructors.

The Indonesian Open University or also known as the Open University (UT) is a higher education institution that implements an open and distance education system. All universities in Indonesia are required to carry out learning, research, and community service activities. To carry out community service activities, Open University provides open courses to the community in various fields. This program is a form of UT's dedication and concern for the Indonesian people. People everywhere can take courses through Massive Open Online Courses (MOOCs). There are currently 23 MOOCs on offer. Another 24 MOOC courses are in development. The public can access MOOCs for free and obtain a certificate if they have passed the competency test. Certain MOOC titles can be used by the public as credit-generating programs. The way Open University MOOCs are held is that for one year the MOOCs are divided into three periods, one period lasts for three months. For three months, people can access which MOOC they want to take part in, then register. In general, they will choose the MOOC they need, whether related to work or to increase knowledge in their lives.

Open University uses the Moodle platform for its Learning Management System (LMS). All MOOCs use the same learning model and platform and are all listed at [MOOCs.ut.ac.id](http://MOOCs.ut.ac.id). Among the 23 MOOCs titles, there are 2 program titles, namely Utilization of Open Educational Resources (OER) and Parenting. These two MOOCs are quite popular MOOCs. The substance of MOOCs Utilizing OER is very general, aiming to help people understand how to utilize so many learning resources correctly and wisely, without making mistakes. Meanwhile, Parenting MOOCs have specificities. Caregiving can be participated in by the entire community, but specifically ECE teachers, parents of young children, childcare providers managed by an institution, and childcare providers. All MOOCs offered by Open University can be accessed by the public for free.

The learning model applied to MOOCs is complete and independent. The research carried out was to see the extent of independence of MOOCs Utilization of OER and Parenting participants in participating in MOOCs. In taking MOOCs, they must study the material, carry out independent exercises, do assignments, and take competency tests. The Indonesian Open University's MOOCs are stand-alone educational resources that offer the chance to present the university to a larger audience by dispensing high-quality education for no cost. The purpose of this study is to outline the initiatives taken by the Indonesian Open University to address issues with limited educational access and quality by offering a variety of open, infinitely enrollable, free courses to the public through MOOCs.

## 2 METHOD

This research aims to look at the profile of people who take UT MOOCs, especially the OER Utilization MOOCs and the Parenting program MOOCs. The assumption is that the OER Utilization MOOCs is of interest to people who have more general abilities, compared to people who take the more specific Parenting program MOOCs, such as parents, PAUD teachers, and housewives. Based on its substance, OER Utilization is more popular with men and women, compared to Parenting program which is more popular with women. Based on these assumptions, researchers surveyed the profiles of people who took part in the MOOCs Utilizing OER and MOOCs Parenting program, and looked at their independence in online learning, especially MOOCs. The results of this research are useful for determining appropriate targets in the future development of MOOCs, which are tailored to society's needs. The research method used was a survey of MOOC participants while they were carrying out learning. The survey was conducted using a Self-Directed Learning questionnaire which is the result of a modification of the Self-Regulated Learning questionnaire developed from previous research.

### 2.1 *Research Procedure*

The research procedures carried out were: 1) compiling a survey questionnaire, through a process of development, review, and revision (construct validity); 2) scheduling online questionnaire completion by MOOC participants; 3) process and analyzing data; 4) reporting. Data processing was carried out using SPSS. The data analysis carried out was qualitative descriptive analysis. The respondents of this research were the population of people who took part in the MOOC Utilization of OER as many as 56 people and the population of people who took part in the MOOC "Parenting" was as many as 73 people. In this research, the Mann-Whitney U test was carried out, namely a non-parametric test to determine whether there is a real difference between the means of two populations with the same distribution, through two independent samples taken from both populations. This test is a test used to test two independent samples (Two Independent Sample Tests).

### 2.2 *Data Analysis*

The Mann-Whitney U test is also called the Wilcoxon Rank Sum Test. It is a non-parametric test option if the Independent T-test cannot be carried out because the normality assumption is not met. However, even though it is an independent t-test in non-parametric form, the Mann-Whitney U Test does not test the difference in the Mean (mean) of two groups like the Independent T-Test but rather tests the difference in the Median (middle value) of two groups. However, some experts still state that the Mann-Whitney U Test does not only test Median differences but also tests the Mean. Why is it like that? because in various cases the medians of the two groups may be the same, but the P value is small, namely  $<0.05$ , which means there is a difference. The reason is because the averages of the two groups are significantly different. So, it can be concluded that this test not only tests the Median difference but also the Mean difference.

The Mann Whitney U test in this study will be used to see whether there are differences in the answers between respondents who took part in the OER Utilization MOOC and the answers of respondents who took part in the Parenting program MOOCs. Research Question (RQ1) What is the profile of the community participating in OER Utilization and Parenting program MOOCs. RQ2, how do people participating in MOOCs utilizing OER and Parenting program carry out independent learning in their environment. RQ3, how does society expect and achieve the goals of MOOCs participants OER Utilization and Parenting program contributed to the child's emotional regulation.

### 3 RESULT AND DISCUSSION

#### 3.1.1 Profile Of MOOCs Participants Use of OER And Parenting Program of Early Childhood Education

Indonesia's demographics consist of many islands. Indonesian people are spread across these islands. The educational background of Indonesian people in urban and rural areas is certainly different. One of them is the demographic factor that influences it. So many things in Indonesia are greatly influenced by demographic factors. UT has the ability and broad reach to touch the entire community through educational programs. Because UT can reach things that other universities cannot reach.

MOOCs, one of UT's programs, has almost even participant coverage throughout Indonesia. MOOCs Utilizing OER had the most participants from West Java. However, other participants were from western and eastern Indonesia. Meanwhile, Parenting MOOCs are also dominated by people from West Java and then East Java. Apart from that, from Sumatra and West Nusa Tenggara. Complete participant domicile profiles can be seen in Figure 1 and 2.

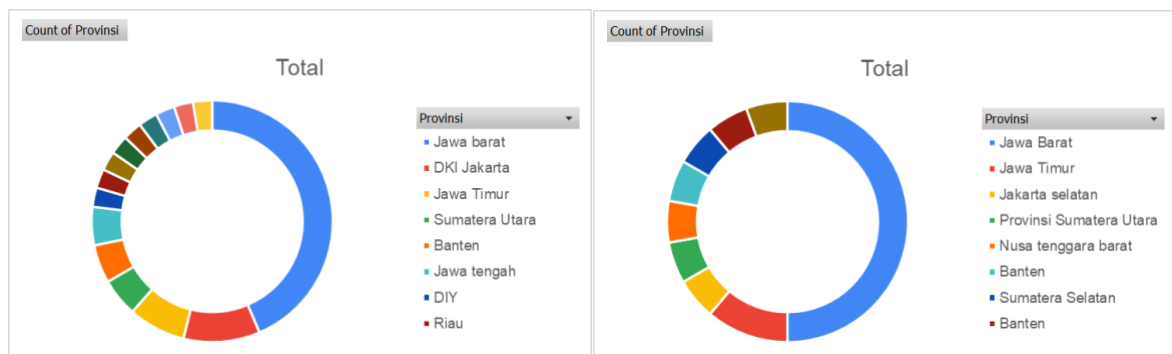


Figure 1. Participants Demographic of OER MOOCs. Figure 2. Participants Demographic of Parenting Program MOOCs

In terms of gender, participants in the MOOCs OER Utilization and Parenting were very different. Participants in the MOOCs Utilization of OER, 57% were men, and 43% were women. Meanwhile, MOOCs Parenting is almost 100% dominated by women (see Figure 3 & 4).

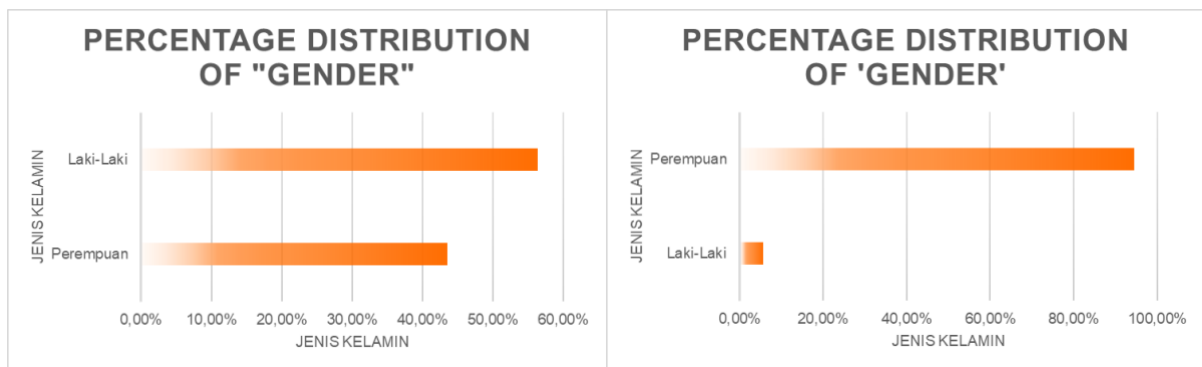


Figure 3 & 4. Participants Gender of the MOOCs OER and Gender of the MOOCs Parenting (graphic description: *Jenis Kelamin*= Gender; *Laki-laki*= Male; *perempuan*= female)

People who take part in the MOOCs Utilizing OER and Parenting programs are generally already working. Nearly 80% of participants in the MOOCs Utilizing OER are working, less than 20% are unemployed, entrepreneurs, interns at one institution, Civil Servants (PNS), and students. For MOOCs Parenting programs less than 70% of participants are working. The rest doesn't work and is random (see Figure 5 & 6).

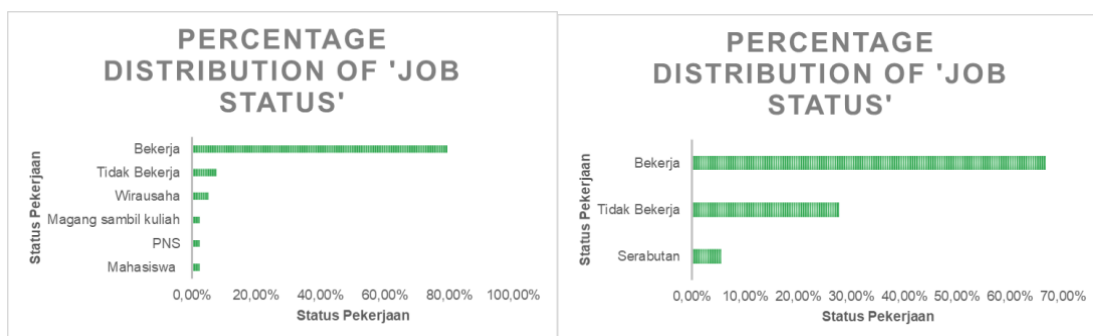


Figure 5 & 6 Participants Job Status (graphic description: *Bekerja*= Work; *Tidak Bekerja*= Not work; *Wirausaha*= businessman; *magang sambil kuliah*= internship while studying; *PNS*= government employees; *Mahasiswa*= college student)

As for the final educational status of the participants in the MOOCs Utilizing OER and Parenting, it is almost the same, above 50% are high school graduates. However, the level of undergraduate MOOCs OER Utilization is above 20%, while the number of participants in MOOCs Parenting is less than 20%. On the other hand, the number of participants with a master's education in the MOOCs Parenting is above 10%, while the number of participants in the MOOCs Utilizing OER with a master's education is less than 10%. For diploma education participants in MOOCs OER Utilization is greater than Parenting(>10%) (see Figure 7 & 8).

Massive Open Online Courses (MOOCs) are a form of eLearning or also known as online learning, which is currently becoming a favorite in the education sector. MOOCs make online learning accessible to many people, heterogeneously, and on a large (world) scale. However, there are still many MOOCs on offer that are still less popular with the public. This possibility occurs because the public does not receive enough information

about MOOCs. Then the MOOCs themselves may be less interesting, the material less useful, and not systematic.

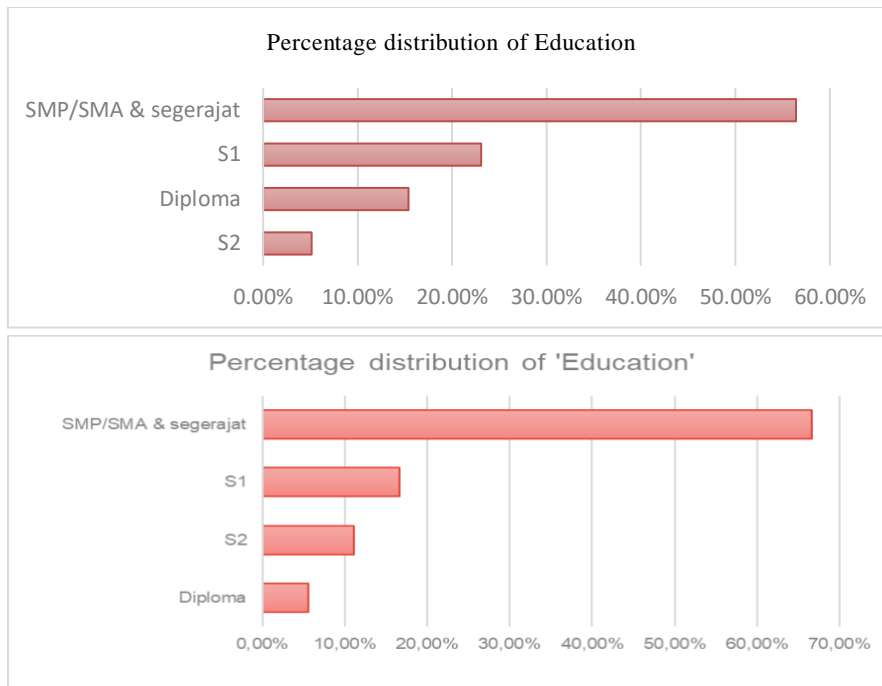


Figure 7 & 8. Participants Education Background (graphic description: SMP/SMA & sederajat= Middle/Senior High School & equivalent; S1= bachelor's degree; S2= Magister; Diploma)

Directed learning in MOOCs offers a solution to this challenge. MOOCs allow participants to follow to achieve certain learning goals that have been planned. This article explores the concept of directed learning in MOOCs, its benefits, and how to provide an online learning experience. Self-Regulated Learning has six dimensions, which are Goals and self-efficacy, Strategy use or routinized performance, Time management, Self-observation, self-judgment, and self-reaction, Environmental structuring, and Selective help seeking (Reparaz et al., 2020).

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MOOC developers in designing learning systematically and systemically, with a variety of course materials. MOOCs are developed comprehensively containing course materials and navigation. A directed MOOC guides learners through a series of lessons, assignments, and assessments that align with the course's learning objectives. Learners follow a clear roadmap, designed by the instructor or course developer, to ensure a more focused and efficient learning experience. In this research self-directed learning focuses on three dimensions, which include 1) Place Determination; 2) Time Management; 3) Efforts to overcome obstacles to online learning.

### 3.1.2 Place Determination

Choose a room that is not disturbed when studying MOOCs. As many as 91.07% of participants in the MOOCs OER Utilization agreed that they could choose a room that would not be disturbed when studying MOOCs, and the remaining 8% thought that this would not be a problem, meaning that some of these respondents did not have a problem if they could not choose a room (See Figure 7).

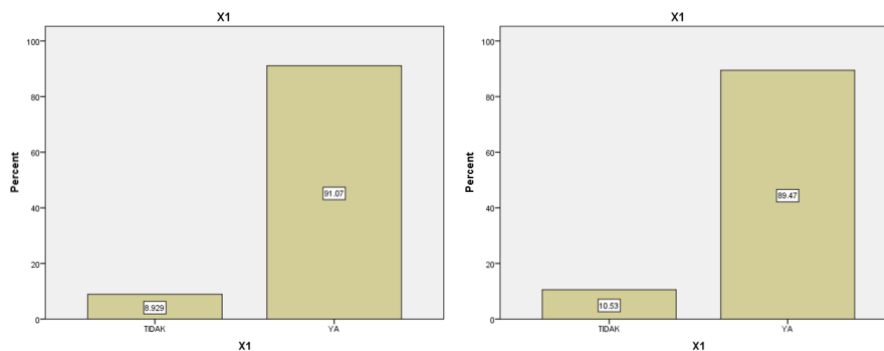


Figure 7. Choose a Room (*Tidak*= No; *Ya*= Yes)

As many as 89.47% of participants in the Parenting MOOCs agreed that they could choose a room that would not be disturbed while studying MOOCs, and another 10.53% of participants thought that this was not a problem, meaning that some participants did not have a problem if they could not choose a room. Choose the most suitable place when studying MOOCs. As many as 94.64% of MOOC participants Utilizing OER already know the most suitable place when studying MOOCs, the other 5% of participants do not yet know what kind of place is suitable for studying MOOCs (See on Figure 8).

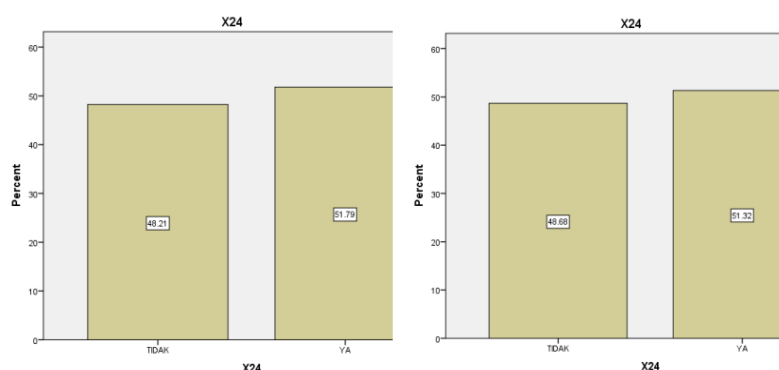


Figure 8. Choose The Most Suitable Place (*Tidak*= No; *Ya*= Yes)



As many as 96.05% of participants in the Parenting MOOCs already know the most suitable place for the respondent to study MOOCs, while the remaining few, namely 3%, do not yet know what kind of place is suitable for their way of learning.

### 3.1.3 Time Management

Choose the least distracted time when studying MOOCs. As many as 94.64% of MOOCs participants "Utilizing OER" chose the least disturbed time to study MOOCs, while the remaining 5% did not choose undisturbed time when studying MOOCs.

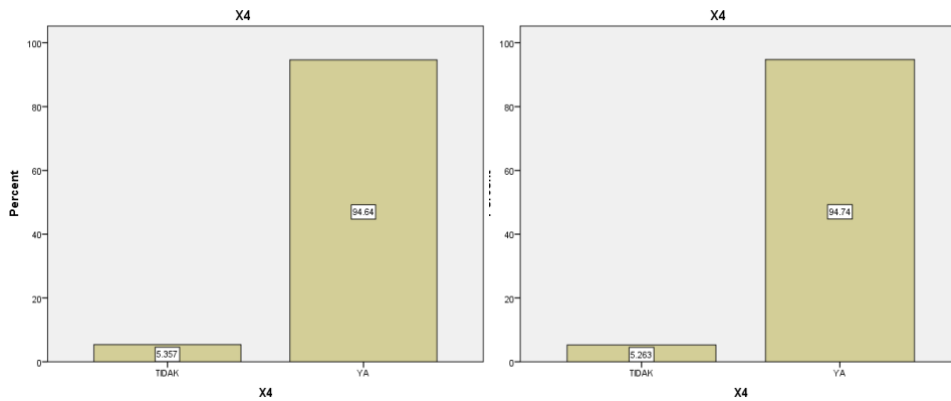


Figure 9. Choose The Least Distracted Time (*Tidak*= No; *Ya*= Yes)

As many as 94.74% of participants in the Parenting MOOCs chose the least disturbed time to study MOOCs, another 5% of participants did not choose a time so as not to be disturbed when studying MOOCs. No need to have special time to study online. As many as 51.79% of participants in the MOOCs Utilizing OER felt that they did not need to have special time for online learning, another 48.21% of participants felt that they needed to have special time for online learning.

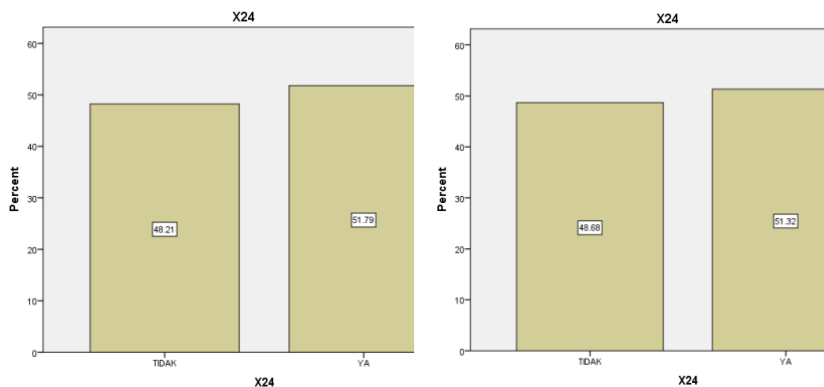


Figure 10. Special Time Are Needed (*Tidak*= No; *Ya*= Yes)

Almost the same, as many as 51.32% of participants in the "Parenting" MOOCs felt that they did not need to have special time to study online, on the other hand, 48.68% of participants felt that they needed to have special time to study online. Create an online learning schedule, including MOOCs every day of the week. As many as 62.5%

MOOC participants Utilizing OER have made an online learning schedule, including MOOCs, every day of the week, while around 37.5% have not made a schedule.

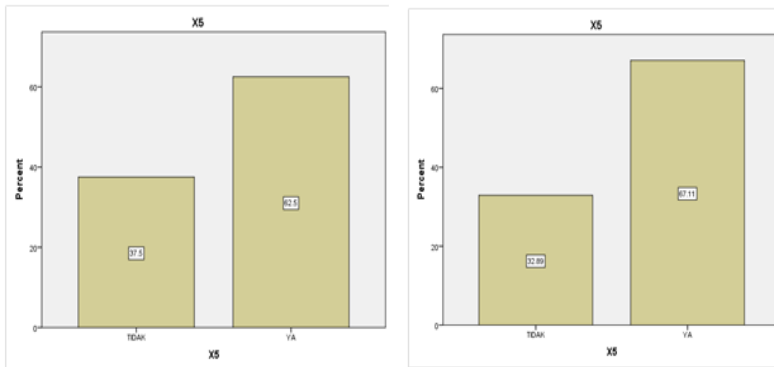


Figure 11. Create An Online Learning Schedule (*Tidak*= No; *Ya*= Yes)

As many as 67.11% of participants in the Parenting MOOC have made an online learning schedule, including MOOCs, every day of the week, while around 32.89% have not made a schedule. Have a schedule and set aside a certain number of hours to study online every day per week. As many as 73.21% of participants in the MOOCs Utilizing OER have a schedule and prepare a certain number of hours for online learning every day per week, while the other 26.79% do not have a schedule, and do not prepare a certain number of hours for online studying every day per week Sunday.

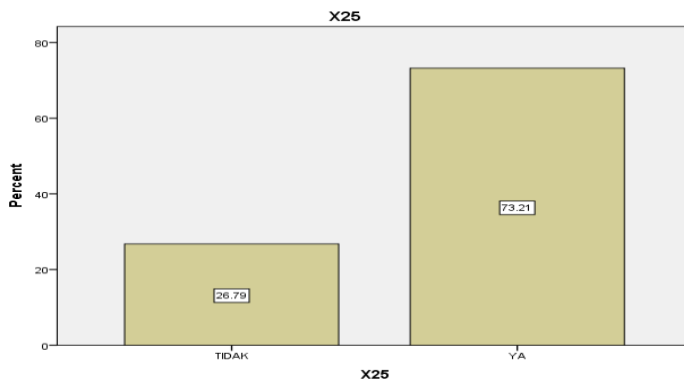


Figure 12. Have Schedule (*Tidak*= No; *Ya*= Yes)

As many as 75% of participants in the Parenting MOOCs have a schedule and prepare a certain number of hours for online study every day per week, 25% of respondents do not have a schedule, and have not prepared a certain number of hours for online study every day per week.

### 3.1.4 Efforts to Overcome Online Learning Obstacles

Know who to ask. 82.14% of MOOC participants Using OER know who to ask if they encounter difficulties when learning online, the other 17% do not know who to ask if they encounter difficulties.

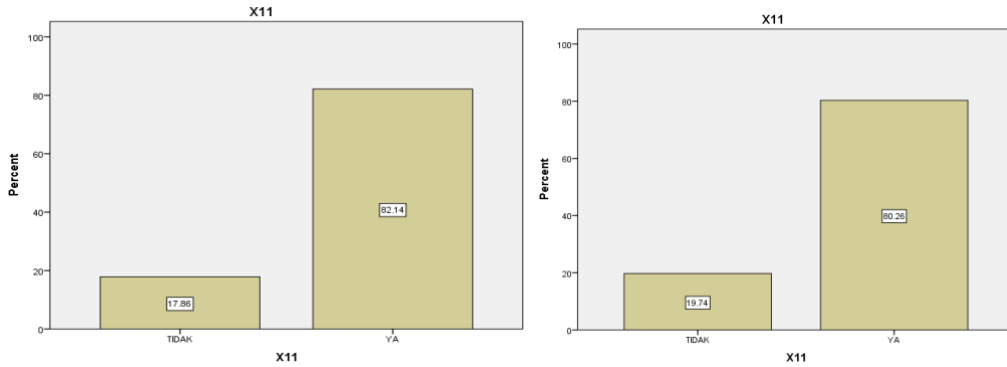


Figure 13. Know who to Ask ((*Tidak*= No; *Ya*= Yes))

80.26% of participants in the Parenting MOOCs know who to ask if they encounter difficulties when learning online, meaning there are still 19.74% of participants who do not know who to ask if they encounter difficulties. Ask people who have experience learning online. A total of 71.43% of participants in the MOOCs "Utilizing OER" decided to ask people who had studied online about the most suitable way to learn online, the other 28% did not ask.

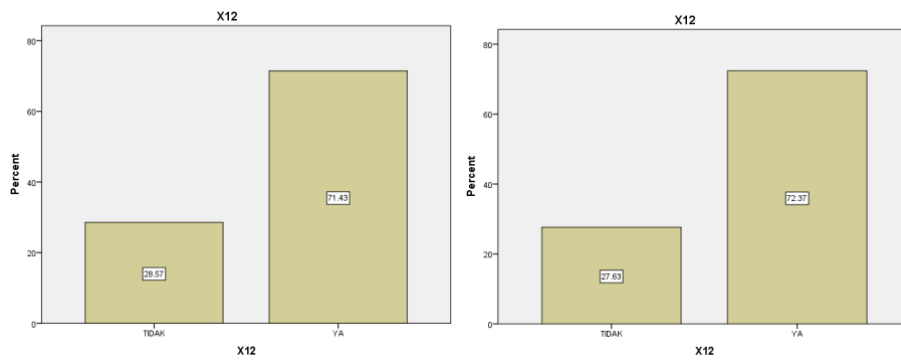


Figure 14. Ask People Who Have Experiences (*Tidak*= No; *Ya*= Yes)

72.37% of participants in the "Parenting" MOOCs decided to ask people who had studied online about the most suitable way to learn online, while around 27.63 % did not ask.

### 3.1.5 Expectations And Accomplishments of MOOCs Learning Objectives

94.64% of participants in the MOOCs Utilizing OER hope that what they learn through MOOCs can be followed up to support their work and professionalism, while as many as 5% of participants disagree with this statement.

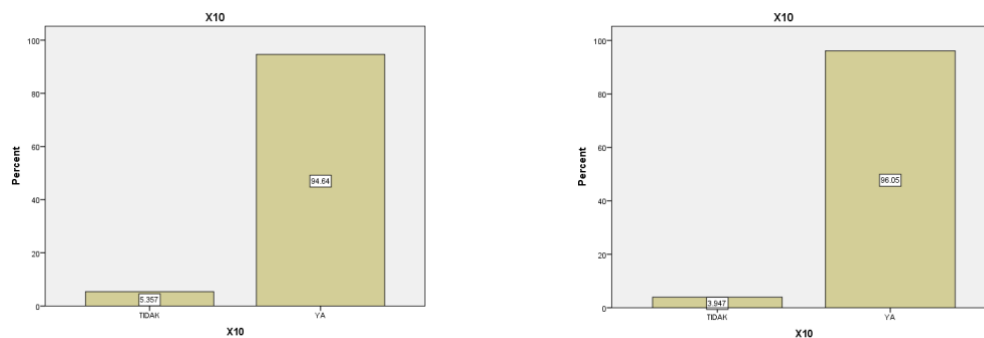


Figure 15. MOOCs Can Be Followed Up to Support Their Work (*Tidak*= No; *Ya*= Yes)

96.05% of participants in the MOOCs Parenting agreed that they hoped that what they learned through MOOCs could be followed up to support their work and professionalism, while as many as 3.94% of participants disagreed with this statement. 89.29% of MOOCs participants Using OER already have targets for completing assignments in the MOOCs program, 10.71% others do not yet have targets.

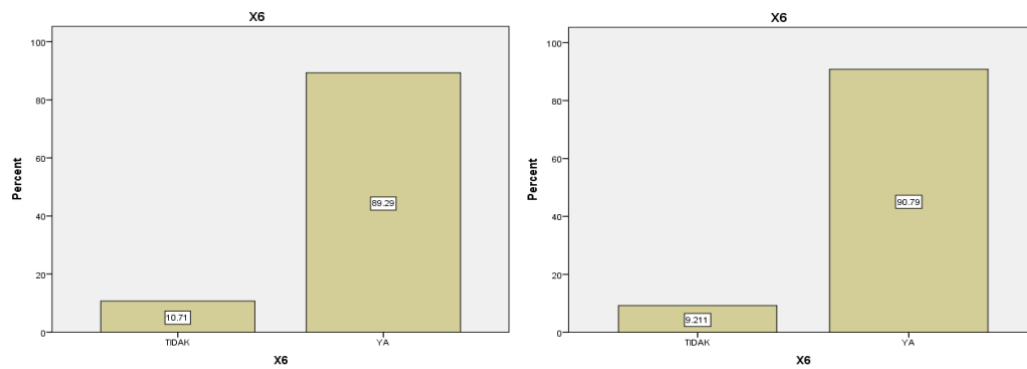


Figure 16. Completing Assignments in the MOOCs (*Tidak*= No; *Ya*= Yes)

90.79% of participants in the MOOCs Parenting have targets for completing tasks in the MOOCs program, the other 9.21% do not yet have targets. 94.64% of participants in the MOOCs Utilizing OER reflected on whether the online learning method they used could achieve the desired target or not, while the other 5% did not do so.

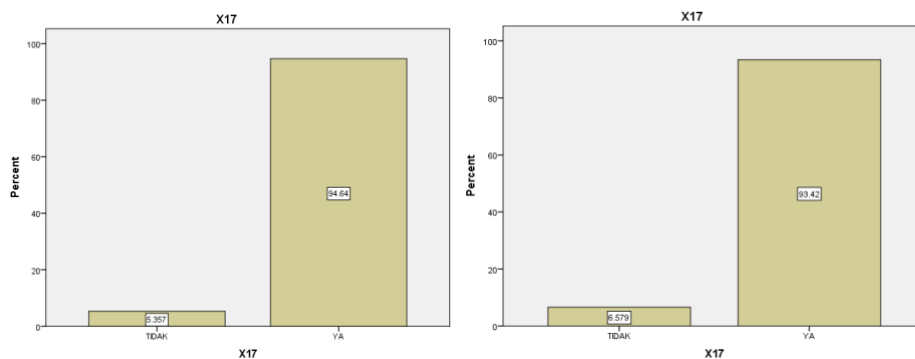


Figure 17. Reflected on Whether the Online Learning (*Tidak*= No; *Ya*= Yes)

Figure 17 shown 93.42% of participants in the Parenting MOOCs reflected again on whether their online learning method could achieve the desired target or not, while as many as 6.58% of participants did not do so. 91.07% of MOOC participants Utilizing OER already have a high reach in studying MOOCs, while the remaining 8% do not have a high reach in studying MOOCs.

MOOCs, according to some experts (Burd et al., 2015), offer great potential to help people because they allow flexible, inexpensive access and quick turnaround for anyone who wants to learn (Rambe & Moeti, 2017). One of the most crucial issues discussed during COVID-19 (Singh & Sharma, 2021) is academic recognition, a community conversation regarding the impact of MOOCs on higher education. Moreover, even if there is a possibility that MOOCs will have a detrimental influence on higher education, there appears to be a willingness to analyze the benefits and make decisions during the

peak of MOOC discussions. The benefits include the promotion of the university's national goals, linked to online classes and internet core skills at Indonesia's open universities, as well as the enhancement of the institution's global status, the attraction of international students, and the promotion of the university's goals nationally.

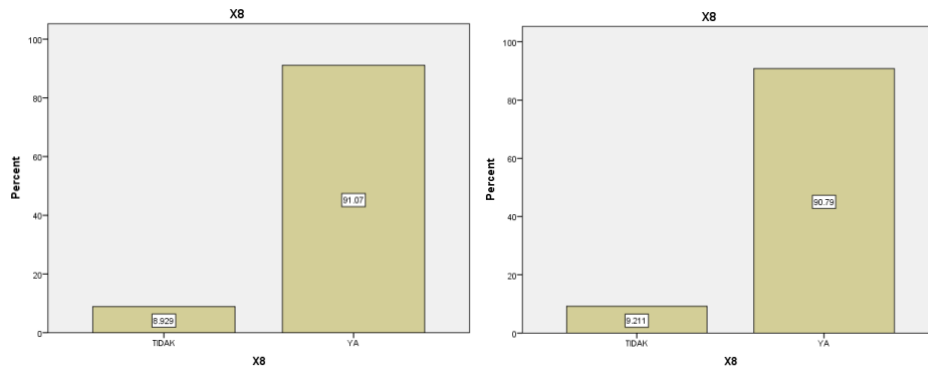


Figure 18. Already Have a High 'Reach' In Studying MOOCs (*Tidak*= No; *Ya*= Yes)

90.79% of participants in the MOOCs Parenting already have a high reach in studying MOOCs, while the remaining 9.21% do not yet (see Figure 18). Finally, MOOCs demonstrate how different resources are distributed among people engaged jobs. Knowledge sharing is defined as. One essential need for the acceptance and application of technical innovations is the willingness to share knowledge and expertise. Knowledge sharing, (Al-Emran et al., 2018) is the exchanging of information, concepts, and experiences between students and teachers via MOOCs. Al-Emran et al., (2018) examined the study literature on knowledge management from 2001 to 2018 and discovered that information sharing is the most often mentioned element and a reliable indicator of technological innovation acceptance and adoption. Researchers found correlations between information exchange in earlier studies (Chong et al., 2013) using a variety of technical tools. Additionally, it was discovered by Arpaci (2019) and Ali et al., (2018) that perceived utility and simplicity of use increased in tandem with perceived usefulness.

#### 4 CONCLUSION

MOOCs are a new way of learning for Indonesian society because they allow universities and institutions to share their best knowledge with everyone. The two big problems of education in Indonesia consist of: 1) access to courses which includes availability and affordability, and 2) the problem of limited teachers, infrastructure, and good governance. Through MOOCs, anyone can take any course and enjoy reading the material, doing exercises, and doing self-assessments. This paper reports the results of a survey of people who participated in the MOOCs program organized by UT. The two MOOCs that are the focus are the OER Utilization MOOCs and the Parenting was MOOCs. This survey looked at the profiles of the two groups of participants and the self-directed learning of both. Several results align with the research hypothesis, where

according to the characteristics of MOOCs substance, participants in the MOOCs OER Utilization are dominated by men. In contrast, the MOOCs Parenting are dominated by women, who have high school, bachelor's, and master's educational backgrounds. On average, those interested in attending lectures are those who want to study while working and most of them work in the private sector, namely 70%. This is interesting because the need to learn about parenting is still people's choice to learn. Participants also stated that by participating in MOOCs their knowledge about how to utilize OER and parenting by scientific principles increased. This can be proven by the statements of MOOC participants Utilizing OER and Parenting which have almost the same percentage. Likewise, if they experienced problems, almost the same participants in both MOOCs decided to ask people who had studied online about the most suitable way of learning online. Unexpectedly, they hope that by studying UT MOOCs they will gain skills that have the potential to increase work professionalism.

## 5 REFERENCES

- Aldowah, H., Al-Samarraie, H., Alzahrani, A. I., & Alalwan, N. (2020). Factors affecting student dropout in MOOCs: A cause and effect decision-making model. *Journal of Computing in Higher Education*, 32(2), 429–454. <https://doi.org/10.1007/s12528-019-09241-y>
- Al-Emran, M., Mezhyuev, V., Kamaludin, A., & Shaalan, K. (2018). The impact of knowledge management processes on information systems: A systematic review. *International Journal of Information Management*, 43, 173–187. <https://doi.org/10.1016/j.ijinfomgt.2018.08.001>
- Ali, Z., Gongbing, B., & Mehreen, A. (2018). Understanding and predicting academic performance through cloud computing adoption: A perspective of technology acceptance model. *Journal of Computers in Education*, 5(3), 297–327. <https://doi.org/10.1007/s40692-018-0114-0>
- Al-Rahmi, W. M., Yahaya, N., Alamri, M. M., Alyoussef, I. Y., Al-Rahmi, A. M., & Kamin, Y. B. (2021). Integrating innovation diffusion theory with technology acceptance model: Supporting students' attitude towards using a massive open online course (MOOCs) systems. *Interactive Learning Environments*, 29(8), 1380–1392. <https://doi.org/10.1080/10494820.2019.1629599>
- Arpaci, I. (2019). A hybrid modeling approach for predicting the educational use of mobile cloud computing services in higher education. *Computers in Human Behavior*, 90, 181–187. <https://doi.org/10.1016/j.chb.2018.09.005>
- Burd, E. L., Smith, S. P., & Reisman, S. (2015). Exploring Business Models for MOOCs in Higher Education. *Innovative Higher Education*, 40(1), 37–49. <https://doi.org/10.1007/s10755-014-9297-0>

- Chong, A. Y.-L., Chan, F. T. S., Goh, M., & Tiwari, M. K. (2013). Do interorganisational relationships and knowledge-management practices enhance collaborative commerce adoption? *International Journal of Production Research*, *51*(7), 2006–2018. <https://doi.org/10.1080/00207543.2012.701776>
- Cohen, L., & Magen-Nagar, N. (2016). Self-Regulated Learning and a Sense of Achievement in MOOCs Among High School Science and Technology Students. *American Journal of Distance Education*, *30*(2), 68–79. <https://doi.org/10.1080/08923647.2016.1155905>
- Corrado, R., Pretorius, E., & van der Westhuizen, G. (2021). Undergraduate Students' Experiences of the Use of MOOCs for Learning at a Cambodian University. *Education Sciences*, *11*(7). <https://doi.org/10.3390/educsci11070336>
- Dai, H. M., Teo, T., & Rappa, N. A. (2020). Understanding continuance intention among MOOC participants: The role of habit and MOOC performance. *Computers in Human Behavior*, *112*, 106455. <https://doi.org/10.1016/j.chb.2020.106455>
- de Freitas, S. I., Morgan, J., & Gibson, D. (2015). Will MOOCs transform learning and teaching in higher education? Engagement and course retention in online learning provision. *British Journal of Educational Technology*, *46*(3), 455–471. <https://doi.org/10.1111/bjet.12268>
- Gardner, J., & Brooks, C. (2018). Student success prediction in MOOCs. *User Modeling and User-Adapted Interaction*, *28*(2), 127–203. <https://doi.org/10.1007/s11257-018-9203-z>
- Hsu, R. L.-W. (2021). A Grounded Theory Exploration of Language Massive Open Online Courses (LMOOCs): Understanding Students' Viewpoints. *Sustainability*, *13*(5). <https://doi.org/10.3390/su13052577>
- Janelli, M., & Lipnevich, A. A. (2021). Effects of pre-tests and feedback on performance outcomes and persistence in Massive Open Online Courses. *Computers & Education*, *161*, 104076. <https://doi.org/10.1016/j.compedu.2020.104076>
- Ma, L., & Lee, C. S. (2020). Drivers and barriers to MOOC adoption: Perspectives from adopters and non-adopters. *Online Information Review*, *44*(3), 671–684. <https://doi.org/10.1108/OIR-06-2019-0203>
- Magen-Nagar, N., & Cohen, L. (2017). Learning strategies as a mediator for motivation and a sense of achievement among students who study in MOOCs. *Education and Information Technologies*, *22*(3), 1271–1290. <https://doi.org/10.1007/s10639-016-9492-y>
- Moore, R. L., & Wang, C. (2021). Influence of learner motivational dispositions on MOOC completion. *Journal of Computing in Higher Education*, *33*(1), 121–134. <https://doi.org/10.1007/s12528-020-09258-8>

- Rambe, P., & Moeti, M. (2017). Disrupting and democratising higher education provision or entrenching academic elitism: Towards a model of MOOCs adoption at African universities. *Educational Technology Research and Development*, 65(3), 631–651. <https://doi.org/10.1007/s11423-016-9500-3>
- Reparaz, C., Aznárez-Sanado, M., & Mendoza, G. (2020). Self-regulation of learning and MOOC retention. *Computers in Human Behavior*, 111, 106423. <https://doi.org/10.1016/j.chb.2020.106423>
- Singh, A., & Sharma, A. (2021). Acceptance of MOOCs as an alternative for internship for management students during COVID-19 pandemic: An Indian perspective. *International Journal of Educational Management*, 35(6), 1231–1244. <https://doi.org/10.1108/IJEM-03-2021-0085>
- Wei, X., Saab, N., & Admiraal, W. (2021). Assessment of cognitive, behavioral, and affective learning outcomes in massive open online courses: A systematic literature review. *Computers & Education*, 163, 104097. <https://doi.org/10.1016/j.compedu.2020.104097>