



Adaptive Learning to Develop and Apply to Arabic Language Learning in Higher Education

Oller Jill ¹, Griebel Gilkerson ², Dale Jane ³, Bowman Hannon ⁴, Hyunjoo Steven ⁵

¹ The University of Hong Kong, Hong Kong

² Nanyang Technological University, Singapura

³ Tsinghua University, China

⁴ Seoul National University, South Korea

⁵ Kyoto University, Japan

Corresponding Author: Oller Jill, E-mail; ollerjill@hotmail.com

Received: Oct 29, 2023	Revised: Nov 13, 2023	Accepted: Nov 13, 2023	Online: Nov 21, 2023
------------------------	-----------------------	------------------------	----------------------

ABSTRACT

Lately, many have been found in the implementation of learning processes using various methods. This can be seen by the number of learners that uses technology-based media that can improve and support the learning process in a university. The learning process is one of the most important things in the world of education. Education is said to be of high quality if, in the learning process, it can improve and develop the talents and skills that exist in students. The purpose of this study was to determine the learning process using Adaptive Learning in developing Arabic learning in universities. The method in this study uses quantitative research methods. The data obtained is through the distribution of questionnaires containing statements in them. The distribution of the questionnaire is by utilizing the Google Form application. The results of this study explain that the learning process using Adaptive Learning can develop students' Arabic learning in universities. This study concludes that the learning process by utilizing Adaptive Learning to develop Arabic learning in higher education is very suitable to be applied in the learning process. The limitation of this study is that researchers only conduct this research at the university level which requires a learning process that suits the needs of students, one of which is by utilizing this Adaptive Learning. Researchers hope that the next researcher can develop the Arabic learning process at a more advanced stage. This study also recommends to future researchers make this research a reference in conducting research related to the learning process using Adaptive Learning.

Keywords: *Adaptive Learning, Arabic Learning, Learning Process*

Journal Homepage <https://ejournal.staialhikmahpariangan.ac.id/Journal/index.php/alhjr/>

This is an open access article under the CC BY SA license

<https://creativecommons.org/licenses/by-sa/4.0/>

How to cite:

Jill, O., Gilkerson, G., Jane, D., Hannon, B & Steven, H. (2023). Adaptive Learning to Develop and Apply to Arabic Language Learning in Higher Education. *Al-Hijr: Journal of Adulearn World*, 2(4), 143-156. <https://doi.org/10.55849/alhjr.v2i2.544>

Published by:

Sekolah Tinggi Agama Islam Al-Hikmah Pariangan Batusangkar

INTRODUCTION

Technology is one of the most important elements in education. These two things are interrelated because without technology, the educational process will not run forward even the education will be far behind both in terms of learning materials, learning processes, learning methods and many other things. So technology and education must be in line so that the educational process can run forward and continue to develop. It can be

seen from generation to generation always experiencing technological developments. This technology can bring great change and influence to every young generation. The change depends on each generation, whether they are wise in using technology or even they are fooled by the existence of technology which causes them to fall into bad things. In this case, the younger generation must be wise in following every technological development.

Technology has a very large function and role in improving the learning process in each educational unit. As in universities, technology that must be mastered by students is increasingly sophisticated and modern. In addition, the quality and quality of learning in universities continues to increase. The process of improving learning in universities must pay attention to every technological development. In this case, students are required to be able to master technology, both in terms of its use and utilization of it. Before that, teaching staff must first master the use of technology, to make it easier for them to later teach their children. As for students who have studied and know the use of technology, they can create new things that can improve and facilitate the learning process. With technology, it will facilitate all student affairs in the learning process.

The development of technology from time to time continues to change, these changes not only have an impact on education but also have an impact on all fields such as the economic sector and many others. Technology that is said to be a tool or container that can facilitate human work must be able to change the pattern of life for the better. In this modern era, technology is growing from time to time. Its development is very influential on all aspects of life, both economic, political, cultural, educational, and so on. Until now the technology that has developed has entered a more sophisticated stage. In Asia and America, many fields utilize technology that can facilitate work, especially in the field of education and it is undeniable that everyone must be able to follow the development of technology so as not to miss information. One of them can be seen in the use of technology in the field of education such as the learning process by applying Adaptive Learning to the learning process.

The learning process on campus has its own systematics and rules. Where in this case each student is required to be able to learn independently and be able to understand learning materials well. With that, students must have skills both cognitive skills, psychomotor, and also accompanied by skills in using technology. Students who already have supplies in themselves about technology will find it easier to carry out the learning process. At the end of learning, it can be seen that students reflect attitudes and personalities that are ibythe identity of the nation, namely creating and forming intelligent people, both in terms of knowledge and behavior. Students who are critical and responsive will appear more prominent because of their activeness in dealing with situations and conditions in the learning process.

The learning process that is carried out has goals and functions. The purpose of the learning process is to achieve maximum learning outcomes. While the function of the learning process is to succeed while shaping the personality of students. Through the learning process, teachers can find out the abilities of students. Learning is the main capital in the delivery of teaching materials or materials and is an indicator of the success

of the implementation of learning in an educational unit. When the learning process takes place, students are not only required to just listen, write, but more precisely, on understanding, thinking patterns, and what activities these students do. When the learning process takes place there is a question and answer between educators and students. In this process, an educator can understand the abilities of his students.

Arabic language learning is one of the foreign language learning that leads students to understand and understand everything related to Arabic. Arabic language learning has an easy-to-understand structure and form. Arabic language learning is one of the tools that can unite the people. Language is also a characteristic and identity of a person. There are so many benefits obtained from learning Arabic such as easy understanding of the Qur'an and hadith, ease of interact, easy of communicate, able to understand language structures by linguistic rules, and many others. Arabic is not just a language that is learned to acquire language skills, but Arabic is a language that can unite people. In Arabic communication competence is required. Language competence is one that can be used as a social tool for interacting.

Arabic has a high position and standing. The Arabic language had a great influence on this tradition. This Arabic language began to enter and develop in the 13th century in Gujarat. Arabic developed through the process of trade and marriage. Along with its development, Arabic has progressed rapidly in Asia, because the majority of the population in Asia is Muslim. Even Arabic language learning in Asia is one of the compulsory subjects studied in various educational institutions, especially boarding schools. The purpose of learning Arabic is to encourage, guide, and develop abilities. Utilizing technology such as Adaptive Learning is expected to be able to change student mindsets, and learning styles, and can overcome the difficulties experienced by students during the learning process.

In the world of education, there is very much the use of technology. Education brings change for the better. The existence of education encourages all students or students to be able to develop the potential that is in them. Education is now increasingly advanced and sophisticated. In the learning process, many kinds of digital technology have been used. The technology is used by students so that students do not miss information. As a person who uses technology, you must be careful and careful about the use of technology. Because just wrong in using it can cause negative influences, such as misuse of technology that can damage the brain. Not only negative sessions, the use of technology also has many positive aspects such as the spread of information faster, learning materials easily accessible everywhere, and many other positive sessions. The impact can be negative, it can be positive it depends on who uses the technology. If they know how to use technology, they will not abuse the use of technology.

Many education experts say that education has a great influence on many people. It can be seen from the changes experienced by people who have adopted education. Good education, if the education can change a nation towards a more advanced direction, of course, accompanied by the use of technology. Many universities have lecturers applying the learning process by combining learning with Adaptive Learning which can facilitate

lecturers in carrying out the learning process. Learning patterns using Adaptive Learning can make the learning process more efficient. Although the learning process with Adaptive Learning requires students to learn independently, in the end, it will have a good impact on students because they are used to being independent in doing tasks.

Literature Review

Adaptive Learning

Adaptive Learning is defined as a teaching and learning process in which the delivery of material is adjusted to the needs of students through appropriate learning resources and getting feedback or quick responses and directions from teachers to their students. Learning using Adaptive is a method in education that combines technological advances such as the use of computers and artificial intelligence. In Adaptive learning, there is a pattern of interaction between educators and their students. When doing process education. At first, students were only recipients of information after learning Adaptive Learning, it led students to learn independently actively and could form collaborations in learning. Adaptive Learning is designed and developed according to needs so that the learning material displayed will be appropriate and indeed the material that students need.

Learning Process

The learning process is the entire series of activities and interactions carried out during the learning process. Education cannot be said to run well, if no learning process occurs in it, so the learning process greatly affects the pattern of education. Education and teaching patterns vary. It can be seen in the learning process carried out in each unit of higher education is different, depending on how the methods used by these lecturers in teaching. The learning process occurs gradually, systematically, purposefully, requires a long time, and between activities has an inseparable relationship with each other. In the learning process, of course, there are components that can support the learning process. These components include lecturers, students, adequate facilities and infrastructure.

There are several opinions of previous researchers regarding Adaptive Learning in Arabic language learning. The first research. entitled the influence of the TGT (Team Games Tournament) type cooperative learning model on the Arabic learning outcomes of grade Eight students at Junior High School stated that TGT (Team Games Tournament) type cooperative learning is very influential on learning outcomes. Secondly, Arabic learning materials can generally be developed through a study (Qabil li Al-bahtsi wa Al-dirasiyah), and its implementation can be supported by several learning methods that are more active, creative, fun, and meaningful. The content of teaching materials must lead to the main orientation of learning a language, namely to realize language through communication and exchanging opinions and thoughts between fellow humans, both related to educational issues, political issues, economic development, civilization and social order.

The research conducted by this researcher is different from research conducted by previous researchers. In the researcher's research this time, the adaptive learning process (Adaptive Learning) is very suitable to be applied to Arabic language learning in

universities because it can increase students' interest and ability in learning. The Adaptive Learning learning process is developed using quantitative research methods. The use of Adaptive Learning supports student development, can increase interest and motivation to learn independently, and can make the learning process more interesting. Adaptive Learning is very feasible to be used and applied to students in higher education to support the skills possessed by these students and motivate students to move forward, because with Adaptive Learning can create new innovations in the learning process.

RESEARCH METHODOLOGY

Type of Research

Based on the type of data, the research conducted by this researcher uses a quantitative approach. A quantitative approach is a research approach based on theory [26]. The strength of this research lies in the theory used. The theory used must be relevant so that it can be tested for correctness. Subjects and objects are important sources of data in a study. This quantitative approach emphasizes the analysis of processes related to observed phenomena, and always uses relevant theories [27]. The quantitative approach explains a phenomenon based on the point of view of outsiders (researchers) [28]. The data analysis technique used in this study is a deductive analysis technique (general to specific). The stages of research are carried out in several processes. The process can be seen in the image below.

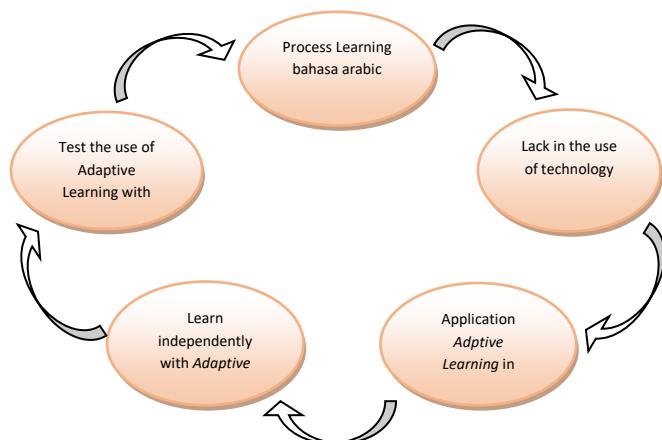


Fig. 1 Adaptive Learning Cycle

In conducting research must pay attention to the steps of research. The research steps must be systematic or sequential. The steps that must be taken in conducting research are 1). Formulate the problem, 2). Mastery of theories by reviewing relevant literature that can be seen to be true, 3). Propose a hypothesis by reviewing the previous hypothesis, 4). Determine the appropriate method for the study, 5). Researchers Compile and design research instruments (research tools), 6). Collecting data while analyzing the data, research data is data obtained from the results of variable measurements, which aims to show the relationship between variables, 7). The data that has been obtained is processed and analyzed using static test tools, there are in the form of table t, table f, and

many others, and 8). Finally, make a conclusion. The data that has been successfully obtained and analyzed is then made a conclusion.

Population and sample

Population is a subject that becomes a whole study that includes living things, objects, symptoms, values, tests, in research [30] The sample is a small part of the population used for research and can already be representative of the population

Research Instruments

Data in quantitative research is collected through a research tool called a research instrument. Research instruments are divided into two, namely test instruments and non-test instruments. This test instrument can be in the form of questions such as questionnaires, observations (observations) and interviews. While non-test instruments are formed in addition to questions. Usually this non-test instrument is in the form of documentation which will later be used as a portfolio. This research instrument was used to obtain and collect evidence in research[31] With the help of instruments can be obtained useful results to draw conclusions later. The use of instruments must be accurate and relevant so that the results obtained from research can be accounted for. In this research, researchers use a test instrument, namely by making a questionnaire containing statements through Google Form.

Data Collection Techniques

Based on the type of research that researchers conducted, the technique used in data collection is through filling out questionnaires. In the questionnaire, there is a questionnaire that will be given to students. The purpose of distributing this questionnaire is to find information about an application of Adaptive Learning in Arabic language learning. In the questionnaire, there are 5 categories of assessment that will be asked to students who fill out the questionnaire by giving a check on one of the answers that is in accordance with the actual situation.

Research Data Analysis Techniques

Data analysis is a way done by researchers to process and process data that has been obtained in order to obtain valid results and easily understood by people. Data analysis techniques in quantitative research are carried out in two ways, namely with descriptive statistics and inferential statistics.

RESULT AND DISCUSSION

Adaptive Learning is one of the teaching methods applied in this day and age. Especially in this day and age has used increasingly sophisticated technology. Adaptive Learning is defined as one of the teaching and learning processes where the learning process is in accordance with the needs of students using easy, clear, and precise learning resources. The advantages of Adaptive Learning are very much like students are accustomed to learning independently, educators can know the character of students to find out the learning methods of each student, as well as the needs of each student, students will learn more focusedly, know abilities in depth, and many others. The application of Adaptive Learning in the learning process is certainly inseparable from

technology, because in Adaptive Learning this guides students to learn independently accompanied by mastery of technology in order to create new innovations.

The learning process varies greatly. There are many ways that can be done to get good results in learning. One of them is by utilizing Adaptive Learning in learning. Learning with Adaptive Learning is a learning process whose learning material is in accordance with student needs. So that the material presented is really the material needed and appropriate as well. The method and the learning process are two things that cannot be separated. Effective learning will only be realized with the right learning method with the support of existing media. With the media and methods, it will certainly be able to realize effective and efficient learning. In this researcher's research, the application of Adaptive Learning in Arabic language learning in universities is very suitable to be applied in Arabic language learning. The content in the teaching material delivered must be in accordance with the main learning objectives. The learning model using Adaptive Learning can be seen in the example image below.

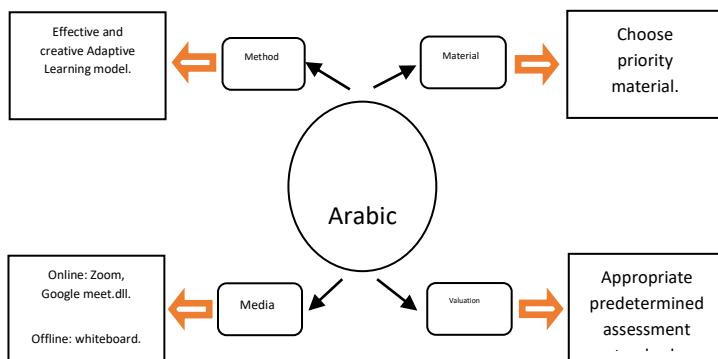


Fig 2. Learning with Adaptive Learning.

Based on the picture above, it can be understood that the processes that occur in learning are interrelated with each other. There will be no learning process if there is one stage that is not passed. The learning process is said to be successful if it can produce superior students, both in academic and non-academic fields, have noble morals, and are able to give birth to new innovations with Adaptive Learning. The learning process with Adaptive Learning focuses on the abilities and needs of students. In this case, Adaptive Learning greatly affects the learning process and greatly implements technological advances in it. Things that can affect learning with this Adaptive Learning method include the determination of the material to be taught, basic understanding, the process of thinking patterns, proficiency in technology, a high level of ability, and having broad knowledge insights.

At this stage of research, researchers did not go directly to the college level to conduct research. Tepai with the spread of a questionnaire. To get good results and worthy of use in learning peoses, processes are needed, namely media feasibility description, material feasibility description, and language feasibility description used. This feasibili

ty description aims to test and find out the shortcomings of existing media, materials and languages. Eligibility descriptions are needed and it is very important to obtain and obtain concrete data on the number of students, the abilities of students, weaknesses of students and any others. The data test is carried out by filling out a questionnaire from Google Form. The questionnaire contains 15 statements that contain Adaptive Learning. From the results of filling out questionnaires that have been filled out by students and female students in universities, the following data can be obtained.

TABLE 1
DATA FROM FILLING OUT THE QUESTIONNAIRE.

No	Statement	Answer				
		SS	S	RR	TS	STS
1	I feel that the adaptive <i>learning</i> process is very helpful for students	61,5%	30,8%	7,7%		
2	I feel that learning with adaptive learning can improve students' abilities because learning is in accordance with the needs of these students.	38,5%	61,5%			
3	I feel that adaptive learning is designed in the teaching and learning process according to student needs.	53,8%	46,2%			
4	I feel that adaptive learning can provide the right learning resources.	53,8%	46,2%			
5	I feel that Adaptive learning is a learning method that prioritizes effectiveness and efficiency.	61,5	38,5%			
6	I feel that adaptive learning can make all students able to learn according to their ability level and portion of their needs.	61,5%	38,5%			
7	I feel that adaptive learning fits the needs of students very well.	46,2%	53,8%			
8	I feel adaptive learning is a technology that can adapt learning materials to student needs.	46,2%	53,8%			
9	I feel that adaptive learning can develop students' abilities.	46,2%	53,8%			
10	In my opinion, Adaptive Learning is an educational method that implements technological advances.	46,2%	53,8%			
11	I feel that adaptive learning makes me	53,8%	46,2%			

	learn even more excited.					
12	I feel adaptive learning can be applied in Arabic language learning in college.	53,8%	38,5%	7,7%		
13	I feel that adaptive learning can attract students to learn according to their needs.	53,8%	38,5%	7,7%		
14	I feel that adaptive learning can regulate the interaction patterns of students or students in carrying out learning activities.	46,2%	53,8%			
15	I feel that the adaptive learning system is very helpful for the learning process	61,5%	38,5%			

Information:

SS = Strongly Agree

S = Agree

RR = Undecided

TS = Disagree

STS = Strongly Disagree

The table above is data obtained from filling out questionnaires containing statements filled out by students in universities. The statement consists of 15 statements related to Adaptive Learning in the learning process. The assessment stage consists of 5 categories which are strongly agree, strongly disagree, hesitate, disagree, and strongly disagree. The highest assessment results of students against the questionnaire that has been given are 61.5% with the category of strongly agree and agree. The second highest assessment result was 53.8% with the category of strongly agree and agree. From the results of filling out the questionnaire, it can be concluded that the Adaptive Learning process applied in Arabic learning in universities is very suitable to be applied. Because Adaptive Learning brings many positive benefits and influences for students such as cognitive development, psychomotor, increasing student interest in learning, motivating students to be more creative and innovative, and forming a more critical mindset in understanding and facing something.

The learning process is very important. With learning, students will learn more directed and programmed. The learning process is said to be quality if the components in learning can be fulfilled. In this case, lecturers must be good at utilizing and applying Adaptive Learning in Arabic language learning in universities. Learning using Adaptive Learning can make students interested in learning because the learning is in accordance with student needs. Student interest in learning also increases when learning using Adaptive Learning. Adaptive Learning is one of the technologies, which in its development has a positive impact on students.

CONCLUSION

Based on the results of research and discussions conducted by researchers above by filling out questionnaires through Google Form. From the researcher's research on the Adaptive Learning process to develop and apply Arabic language learning in universities, it can be concluded that Adaptive Learning is very suitable to be applied in Arabic language learning in universities. Adaptive Learning that is applied gets a positive response among students, because the teaching material taught is in accordance with student needs. With Adaptive Learning, learning materials are easily conveyed to students and students are responsive in the material delivered. The learning process will never be separated from technology, such as at present the use of Adaptive Learning which brings a myriad of positive impacts to student development both in terms of knowledge, insight, attitudes, and others.

ACKNOWLEDGMENT

Previously, the researcher thanked those who had helped and allowed researchers to research research entitled Adaptive Learning to develop and apply to Arabic language learning in universities. After researchers conducted this study, researchers became increasingly aware that the Adaptive Learning learning process is very influential in the development of the learning process and has a positive impact on students. Hopefully the research that the researchers did can be a reference for future researchers.

REFERENCES

Alzheimer's Association. (2018). 2018 Alzheimer's disease facts and figures. *Alzheimer's & Dementia*, 14(3), 367–429. <https://doi.org/10.1016/j.jalz.2018.02.001>

Armitage, N. P., Mele, E. J., & Vishwanath, A. (2018). Weyl and Dirac semimetals in three-dimensional solids. *Reviews of Modern Physics*, 90(1), 015001. <https://doi.org/10.1103/RevModPhys.90.015001>

Chen, J. S., Ma, E., Harrington, L. B., Da Costa, M., Tian, X., Palefsky, J. M., & Doudna, J. A. (2018). CRISPR-Cas12a target binding unleashes indiscriminate single-stranded DNase activity. *Science*, 360(6387), 436–439. <https://doi.org/10.1126/science.aar6245>

Elgrishi, N., Rountree, K. J., McCarthy, B. D., Rountree, E. S., Eisenhart, T. T., & Dempsey, J. L. (2018). A Practical Beginner's Guide to Cyclic Voltammetry. *Journal of Chemical Education*, 95(2), 197–206. <https://doi.org/10.1021/acs.jchemed.7b00361>

Fajgenbaum, D. C., & June, C. H. (2020). Cytokine Storm. *New England Journal of Medicine*, 383(23), 2255–2273. <https://doi.org/10.1056/NEJMra2026131>

Funder, D. C., & Ozer, D. J. (2019). Evaluating Effect Size in Psychological Research: Sense and Nonsense. *Advances in Methods and Practices in Psychological Science*, 2(2), 156–168. <https://doi.org/10.1177/2515245919847202>

Gu, J., Wang, Z., Kuen, J., Ma, L., Shahroudy, A., Shuai, B., Liu, T., Wang, X., Wang, G., Cai, J., & Chen, T. (2018). Recent advances in convolutional neural networks. *Pattern Recognition*, 77, 354–377. <https://doi.org/10.1016/j.patcog.2017.10.013>

Guan, W., Ni, Z., Hu, Y., Liang, W., Ou, C., He, J., Liu, L., Shan, H., Lei, C., Hui, D. S. C., Du, B., Li, L., Zeng, G., Yuen, K.-Y., Chen, R., Tang, C., Wang, T., Chen, P., Xiang, J., ... Zhong, N. (2020). Clinical Characteristics of Coronavirus Disease 2019 in China. *New England Journal of Medicine*, 382(18), 1708–1720. <https://doi.org/10.1056/NEJMoa2002032>

Hansen, K., Breyer, C., & Lund, H. (2019). Status and perspectives on 100% renewable energy systems. *Energy*, 175, 471–480. <https://doi.org/10.1016/j.energy.2019.03.092>

Huang, Y., Wang, Y., Wang, H., Liu, Z., Yu, X., Yan, J., Yu, Y., Kou, C., Xu, X., Lu, J., Wang, Z., He, S., Xu, Y., He, Y., Li, T., Guo, W., Tian, H., Xu, G., Xu, X., ... Wu, Y. (2019). Prevalence of mental disorders in China: A cross-sectional epidemiological study. *The Lancet Psychiatry*, 6(3), 211–224. [https://doi.org/10.1016/S2215-0366\(18\)30511-X](https://doi.org/10.1016/S2215-0366(18)30511-X)

Kermany, D. S., Goldbaum, M., Cai, W., Valentim, C. C. S., Liang, H., Baxter, S. L., McKeown, A., Yang, G., Wu, X., Yan, F., Dong, J., Prasadha, M. K., Pei, J., Ting, M. Y. L., Zhu, J., Li, C., Hewett, S., Dong, J., Ziyar, I., ... Zhang, K. (2018). Identifying Medical Diagnoses and Treatable Diseases by Image-Based Deep Learning. *Cell*, 172(5), 1122-1131.e9. <https://doi.org/10.1016/j.cell.2018.02.010>

Kucharski, A. J., Russell, T. W., Diamond, C., Liu, Y., Edmunds, J., Funk, S., Eggo, R. M., Sun, F., Jit, M., Munday, J. D., Davies, N., Gimma, A., van Zandvoort, K., Gibbs, H., Hellewell, J., Jarvis, C. I., Clifford, S., Quilty, B. J., Bosse, N. I., ... Flasche, S. (2020). Early dynamics of transmission and control of COVID-19: A mathematical modelling study. *The Lancet Infectious Diseases*, 20(5), 553–558. [https://doi.org/10.1016/S1473-3099\(20\)30144-4](https://doi.org/10.1016/S1473-3099(20)30144-4)

Lai, J., Ma, S., Wang, Y., Cai, Z., Hu, J., Wei, N., Wu, J., Du, H., Chen, T., Li, R., Tan, H., Kang, L., Yao, L., Huang, M., Wang, H., Wang, G., Liu, Z., & Hu, S. (2020). Factors Associated With Mental Health Outcomes Among Health Care Workers Exposed to Coronavirus Disease 2019. *JAMA Network Open*, 3(3), e203976. <https://doi.org/10.1001/jamanetworkopen.2020.3976>

Li, Z., Chen, D., An, Y., Chen, C., Wu, L., Chen, Z., Sun, Y., & Zhang, X. (2020). Flexible and anti-freezing quasi-solid-state zinc ion hybrid supercapacitors based on pencil shavings derived porous carbon. *Energy Storage Materials*, 28, 307–314. <https://doi.org/10.1016/j.ensm.2020.01.028>

Lin, T.-Y., Goyal, P., Girshick, R., He, K., & Dollar, P. (2020). Focal Loss for Dense Object Detection. *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 42(2), 318–327. <https://doi.org/10.1109/TPAMI.2018.2858826>

Liu, B., Zheng, D., Jin, Q., Chen, L., & Yang, J. (2019). VFDB 2019: A comparative pathogenomic platform with an interactive web interface. *Nucleic Acids Research*, 47(D1), D687–D692. <https://doi.org/10.1093/nar/gky1080>

Liu, J., Lichtenberg, T., Hoadley, K. A., Poisson, L. M., Lazar, A. J., Cherniack, A. D., Kovatich, A. J., Benz, C. C., Levine, D. A., Lee, A. V., Omberg, L., Wolf, D. M., Shriver, C. D., Thorsson, V., Hu, H., Caesar-Johnson, S. J., Demchok, J. A., Felau, I., Kasapi, M., ... Mariamidze, A. (2018). An Integrated TCGA Pan-Cancer Clinical Data Resource to Drive High-Quality Survival Outcome Analytics. *Cell*, 173(2), 400-416.e11. <https://doi.org/10.1016/j.cell.2018.02.052>

Metlay, J. P., Waterer, G. W., Long, A. C., Anzueto, A., Brozek, J., Crothers, K., Cooley, L. A., Dean, N. C., Fine, M. J., Flanders, S. A., Griffin, M. R., Metersky, M. L., Musher, D. M., Restrepo, M. I., & Whitney, C. G. (2019). Diagnosis and Treatment of Adults with Community-acquired Pneumonia. An Official Clinical Practice

Guideline of the American Thoracic Society and Infectious Diseases Society of America. *American Journal of Respiratory and Critical Care Medicine*, 200(7), e45–e67. <https://doi.org/10.1164/rccm.201908-1581ST>

Mi, H., Muruganujan, A., Ebert, D., Huang, X., & Thomas, P. D. (2019). PANTHER version 14: More genomes, a new PANTHER GO-slim and improvements in enrichment analysis tools. *Nucleic Acids Research*, 47(D1), D419–D426. <https://doi.org/10.1093/nar/gky1038>

Neese, F. (2018). Software update: The ORCA program system, version 4.0. *WIREs Computational Molecular Science*, 8(1). <https://doi.org/10.1002/wcms.1327>

Perez-Riverol, Y., Csordas, A., Bai, J., Bernal-Llinares, M., Hewapathirana, S., Kundu, D. J., Inuganti, A., Griss, J., Mayer, G., Eisenacher, M., Pérez, E., Uszkoreit, J., Pfeuffer, J., Sachsenberg, T., Yilmaz, S., Tiwary, S., Cox, J., Audain, E., Walzer, M., ... Vizcaíno, J. A. (2019). The PRIDE database and related tools and resources in 2019: Improving support for quantification data. *Nucleic Acids Research*, 47(D1), D442–D450. <https://doi.org/10.1093/nar/gky1106>

Poore, J., & Nemecek, T. (2018). Reducing food's environmental impacts through producers and consumers. *Science*, 360(6392), 987–992. <https://doi.org/10.1126/science.aaq0216>

Rajkumar, R. P. (2020). COVID-19 and mental health: A review of the existing literature. *Asian Journal of Psychiatry*, 52, 102066. <https://doi.org/10.1016/j.ajp.2020.102066>

Rambaut, A., Drummond, A. J., Xie, D., Baele, G., & Suchard, M. A. (2018). Posterior Summarization in Bayesian Phylogenetics Using Tracer 1.7. *Systematic Biology*, 67(5), 901–904. <https://doi.org/10.1093/sysbio/syy032>

Richards, G. (2018). Cultural tourism: A review of recent research and trends. *Journal of Hospitality and Tourism Management*, 36, 12–21. <https://doi.org/10.1016/j.jhtm.2018.03.005>

Routy, B., Le Chatelier, E., Derosa, L., Duong, C. P. M., Alou, M. T., Daillère, R., Fluckiger, A., Messaoudene, M., Rauber, C., Roberti, M. P., Fidelle, M., Flament, C., Poirier-Colame, V., Opolon, P., Klein, C., Iribarren, K., Mondragón, L., Jacquemet, N., Qu, B., ... Zitvogel, L. (2018). Gut microbiome influences efficacy of PD-1-based immunotherapy against epithelial tumors. *Science*, 359(6371), 91–97. <https://doi.org/10.1126/science.aan3706>

Ryan, R. M., & Deci, E. L. (2020). Intrinsic and extrinsic motivation from a self-determination theory perspective: Definitions, theory, practices, and future directions. *Contemporary Educational Psychology*, 61, 101860. <https://doi.org/10.1016/j.cedpsych.2020.101860>

Schmid, P., Adams, S., Rugo, H. S., Schneeweiss, A., Barrios, C. H., Iwata, H., Diéras, V., Hegg, R., Im, S.-A., Shaw Wright, G., Henschel, V., Molinero, L., Chui, S. Y., Funke, R., Husain, A., Winer, E. P., Loi, S., & Emens, L. A. (2018). Atezolizumab and Nab-Paclitaxel in Advanced Triple-Negative Breast Cancer. *New England Journal of Medicine*, 379(22), 2108–2121. <https://doi.org/10.1056/NEJMoa1809615>

Siegel, R. L., Miller, K. D., & Jemal, A. (2019). Cancer statistics, 2019. *CA: A Cancer Journal for Clinicians*, 69(1), 7–34. <https://doi.org/10.3322/caac.21551>

The UniProt Consortium. (2019). UniProt: A worldwide hub of protein knowledge. *Nucleic Acids Research*, 47(D1), D506–D515. <https://doi.org/10.1093/nar/gky1049>

Thorsson, V., Gibbs, D. L., Brown, S. D., Wolf, D., Bortone, D. S., Ou Yang, T.-H., Porta-Pardo, E., Gao, G. F., Plaisier, C. L., Eddy, J. A., Ziv, E., Culhane, A. C., Paull, E. O., Sivakumar, I. K. A., Gentles, A. J., Malhotra, R., Farshidfar, F.,

Colaprico, A., Parker, J. S., ... Mariamidze, A. (2018). The Immune Landscape of Cancer. *Immunity*, 48(4), 812-830.e14. <https://doi.org/10.1016/j.immuni.2018.03.023>

Torre, L. A., Trabert, B., DeSantis, C. E., Miller, K. D., Samimi, G., Runowicz, C. D., Gaudet, M. M., Jemal, A., & Siegel, R. L. (2018). Ovarian cancer statistics, 2018: Ovarian Cancer Statistics, 2018. *CA: A Cancer Journal for Clinicians*, 68(4), 284–296. <https://doi.org/10.3322/caac.21456>

Verity, R., Okell, L. C., Dorigatti, I., Winskill, P., Whittaker, C., Imai, N., Cuomo-Dannenburg, G., Thompson, H., Walker, P. G. T., Fu, H., Dighe, A., Griffin, J. T., Baguelin, M., Bhatia, S., Boonyasiri, A., Cori, A., Cucunubá, Z., FitzJohn, R., Gaythorpe, K., ... Ferguson, N. M. (2020). Estimates of the severity of coronavirus disease 2019: A model-based analysis. *The Lancet Infectious Diseases*, 20(6), 669–677. [https://doi.org/10.1016/S1473-3099\(20\)30243-7](https://doi.org/10.1016/S1473-3099(20)30243-7)

Vosoughi, S., Roy, D., & Aral, S. (2018). The spread of true and false news online. *Science*, 359(6380), 1146–1151. <https://doi.org/10.1126/science.aap9559>

Wishart, D. S., Feunang, Y. D., Guo, A. C., Lo, E. J., Marcu, A., Grant, J. R., Sajed, T., Johnson, D., Li, C., Sayeeda, Z., Assempour, N., Iynkkaran, I., Liu, Y., Maciejewski, A., Gale, N., Wilson, A., Chin, L., Cummings, R., Le, D., ... Wilson, M. (2018). DrugBank 5.0: A major update to the DrugBank database for 2018. *Nucleic Acids Research*, 46(D1), D1074–D1082. <https://doi.org/10.1093/nar/gkx1037>

Wu, J. T., Leung, K., & Leung, G. M. (2020). Nowcasting and forecasting the potential domestic and international spread of the 2019-nCoV outbreak originating in Wuhan, China: A modelling study. *The Lancet*, 395(10225), 689–697. [https://doi.org/10.1016/S0140-6736\(20\)30260-9](https://doi.org/10.1016/S0140-6736(20)30260-9)

Yuan, J., Zhang, Y., Zhou, L., Zhang, G., Yip, H.-L., Lau, T.-K., Lu, X., Zhu, C., Peng, H., Johnson, P. A., Leclerc, M., Cao, Y., Ułanski, J., Li, Y., & Zou, Y. (2019). Single-Junction Organic Solar Cell with over 15% Efficiency Using Fused-Ring Acceptor with Electron-Deficient Core. *Joule*, 3(4), 1140–1151. <https://doi.org/10.1016/j.joule.2019.01.004>

Zhang, J., Litvinova, M., Liang, Y., Wang, Y., Wang, W., Zhao, S., Wu, Q., Merler, S., Viboud, C., Vespignani, A., Ajelli, M., & Yu, H. (2020). Changes in contact patterns shape the dynamics of the COVID-19 outbreak in China. *Science*, 368(6498), 1481–1486. <https://doi.org/10.1126/science.abb8001>

Марченко (Marchenko), Р. (Roman) А. (Aleksandrovich), Чендылова (Chendylova), Л. (Larisa) В. (Valer'yevna), Каретникова (Karetnikova), Н. (Natal'ya) В. (Viktorovna), Пен (Pen), Р. (Robert) З. (Zus'yevich), & Алашкевич (Alashkevich), Ю. (Yuriy) Д. (Davydovich). (2018). PROPERTIES OF THE REFINER MECHANICAL PULP FROM FLAX SHIVE. *Chemistry of Plant Raw Material*, 4, 247–253. <https://doi.org/10.14258/jcprm.2018043927>

Copyright Holder :
© Oller Jill et al. (2023).

First Publication Right :
© Al-Hijr: Journal of Adulearn World

This article is under:

