

Anti-Bullying Education As A Character Education Effort To Prevent Violence Among Students

Daulat Nathanael Banjarnahor^{1*}, Sepriandison Saragih², Firinta Togatorop³,
Jan Sardo Pratama Purba⁴

¹Universitas HKBP Nommensen Pematangsiantar, Indonesia

²Universitas HKBP Nommensen Pematangsiantar, Indonesia

³Politeknik Bisnis Indonesia

⁴Universitas HKBP Nommensen Pematangsiantar, Indonesia

ABSTRACT

Bullying remains a serious problem in many schools in Indonesia. In general, data from the UN Children's Fund (UNICEF), released in 2021, indicates that approximately 30% of students have experienced bullying at school. The prevalence of bullying tends to make children who are victims feel afraid, isolated, and stressed, which negatively impacts their mental health and academic performance. Bullying cases in schools in Indonesia are quite concerning. The Indonesian Child Protection Commission (KPAI) recorded 17 cases of physical violence in 2021, resulting in six student deaths and one paralysis. This Community Service (PkM) activity aims to educate the academic community of Muhammadiyah 55 Kandungan Private Middle School so they understand the dangers of bullying and understand character education from an early age as a way to prevent bullying in and outside of school. The results obtained through the implementation of the PkM activity are that the students of Muhammadiyah 55 Kandungan Private Middle School have a better understanding of the meaning, types, and dangers of Bullying, as well as character education efforts as the best way to reduce and prevent Bullying at school and outside of school. The school and the PkM Team have almost the same views and suggestions, namely that there is a need for further activities in other forms, for example a Workshop within the framework of the Anti -Bullying School strengthening project.

Keywords: *Anti-Bullying, Character, Prevention of Violence, Students*

Received: 01.11.2024	Revised: 10.11.2024	Accepted: 20.11.2024	Available online: 25.11.2024
-------------------------	------------------------	-------------------------	---------------------------------

Suggested citations:

Daulat Nathanael Banjarnahor, Sepriandison Saragih, Firinta Togatorop, Jan Sardo Pratama Purba (2024). Anti-Bullying Education As A Character Education Effort To Prevent Violence Among Students. *International Journal of Community Service* , 3 (2), 371-380. DOI: 10.55299/ijcs.v3i2.1578

INTRODUCTION

Bullying is a serious problem for many schools in Indonesia. In general, data from the UN Children's Fund (UNICEF) released in 2021 indicates that approximately 30% of students have experienced bullying at school (Yohanna & Maya, 2019). The impact

of the rampant bullying is that children who become victims tend to feel afraid, isolated, and stressed, which has a negative impact on their mental health and academic achievement (Wagiono, Shaddiq, & Junaidi, 2021). They also feel depressed and withdraw from their social environments (Widiyanthi, 2017)

Bullying in schools in Indonesia is a concern. The Indonesian Child Protection Commission (KPAI) recorded 17 cases of physical violence in 2021, resulting in six student deaths and one paralysis (Ningsih, Yuwono, Sholehuddin, & Suharto, 2021). Furthermore, UNICEF published a 2016 report that Indonesia ranked first in cases of violence against children in schools, with a percentage of 84 percent. This percentage is higher compared to Vietnam and Nepal which have a percentage of 79 percent. (Zakiah, Fedryansyah, & Gutama, 2019)

Thus, from the various data presented previously, we can see that *bullying* is a serious threat to the development of children and adolescents (Xiao et al., 2021). Schools, as formal educational institutions, should be able to provide a safe and comfortable place for students (Susandi, Luayyin, & Dirgayunita, 2021). However, ironically, today bullying often occurs in the place where *bullying occurs* (Lismana & Syukur, 2023). Several studies have explained several factors that cause *bullying* in schools, including problematic family factors, peer groups, school climates that do not support student comfort, lack of comprehensive teacher supervision, weak enforcement of rules and sanctions, schools that do not pay attention to *bullying behavior*, and lack of information regarding the dangers of *bullying behavior* (Baldry, 2023).

bullying cases that have occurred with victims or perpetrators from among children in Indonesia, which have attracted the attention of the Indonesian public (Rahmawati, Rofiqoh, Islahati, & Salimi, 2019):

- 1) A case of *bullying* experienced by a child with the initials AR (9 years old), a student in Subang Regency, West Java, who died after allegedly being a victim of bullying (Gaffney, Ttofi, & Farrington, 2019).
- 2) *bullying* case experienced by a 2nd grade elementary school child in Riau, which resulted in his death, is suspected to be a victim of bullying or *abuse*, based on differences in ethnicity and religion. (Fredy, Tembang, Bito, & Sholikhah, 2020).

Therefore, considering the ongoing cases of bullying in Indonesia, which have even penetrated the student environment, serious attention is needed from all parties to reduce the number of bullying incidents and ensure the mental and physical growth and development of Indonesian children (Rahmanto, Dwikurnaningsih, & Setyorini, 2019). Therefore, anti -*bullying* educational activities can be considered an important and mandatory effort to instill good character in children and adolescents from an early age.

METHOD

This PkM activity was carried out in the form of collaboration between Lecturers and Students of HKBP Nommensen Pematangsiantar University, and Lecturers of the Indonesian Business Polytechnic, with the topic "Anti -*Bullying Education* as an Effort to Build Character Education to Prevent Violence Among Students" and was held at

Muhammadiyah 55 Kandungan Private Middle School, Simalungun Regency on October 12, 2024 (Sari, Mariyani, Miko, & Oktviana, 2024).

The methods used to implement this PkM activity are lecture and dialogue activities, interspersed with discussions and questions and answers, showing videos related to the dangers of *bullying*, carrying out real actions by making and distributing anti *-bullying posters*, and direct examples through role playing about the dangers of *bullying* (Man, Liu, & Xue, 2022).

Before the PkM activity was carried out, the PkM Team first conducted a survey by conducting interviews with the Principal and the Assistant Principal for Student Affairs to dig up information and obtain initial data and information related to the understanding of bullying where The results generally showed that the principal explained that there were still students and teachers who did not understand bullying well (Syarifuddin, Hendrawansyah, & Putra, 2023).

The agenda used in implementing PkM activities is as follows:

- 1) Opening Prayer and Opening Greetings from the Protocol/MC;
- 2) Welcome remarks from the Principal/Assistant Principal as well as opening the PkM activities (Zellma, Buchta, & Cichosz, 2022).
- 3) Introduction to the PkM Team;
- 4) *Power Point* Material and Display of Videos related to the material;
- 5) Discussion session with questions and answers/quizzes between the PkM Team and Participants (students) regarding understanding the material
- 6) *Role play* simulation about *bullying* ;
- 7) *-Bullying Posters* ;
- 8) Closing Prayer;
- 9) The PkM activities have been completed.

The PkM team releases the output of the implementation of PkM activities through PkM results reports, Online Mass Media, and PkM Results Scientific Journals, and other outputs (Fauzia, 2021).

RESULTS AND DISCUSSION

The results obtained through the implementation of the PkM activity are that the students of Muhammadiyah 55 Kandungan Private Middle School have a better understanding of the meaning, types, and dangers of *Bullying*, as well as character education efforts as the best way to reduce and prevent *Bullying* in and outside of school (Islam, Muharom, Annur, Senja, & Alfi, 2022). Furthermore, in the implementation of the PkM activity, several results were obtained that can be implemented by the PkM Team, namely (Sakban, Sahrul, Kasmawati, & Tahir, 2018).

- 1) Building or instilling awareness of the dangers of *bullying*, and Character Education from an early age by means of education on understanding the meaning and types of bullying, and how to build communication, interaction, and create conditions at school and outside school that are free from *bullying*.
- 2) Conducting education on *bullying* as a crime that has legal consequences and severe sanctions for perpetrators and providing education on legal regulations in Indonesia that regulate *bullying* (Wagner, 2019).

The results of PkM activities are described through the following actions :

- 1) Providing education to students, teachers and school principals through several forms of activities:
 - a. Lecture and dialogue activities about the definition, types and dangers of *bullying*, as well as character education, interspersed with discussions and questions and answers; (Purwati, Noor, & Rukanda, 2022).
 - b. Showing videos related to the dangers of *bullying for children and teenagers*;
 - c. Implementation of real action by making and distributing anti-bullying posters, as well as direct examples through role play about the dangers of bullying, followed by the distribution of posters designed and printed to be posted in the classroom (Widiyanthi, 2017).
- 2) Educating students, teachers, and principals to introduce various laws and regulations along with sanctions as legal consequences of bullying through lectures, dialogues, and discussions/questions and answers. Furthermore, the PkM Team also provided brief education on how students, teachers, and principals can prevent and handle *bullying* at school and outside of school (Hart, 2022).

Discussion

Re-Understanding the Dangers of *Bullying*

Bullying is any act of oppression or violence intentionally perpetrated by a stronger individual or group. *Bullying* generally aims to harm others and is performed repeatedly. The word "*bullying*" comes from English and is translated into Indonesian as "perundungan," "penindasan," and "risak." According to Ken Rigby, bullying is a desire to harm (Ferdiawan & Putra, 2013). This desire can be seen in actions that cause someone to suffer bullying is usually carried out by a stronger individual or group, is repeated, the perpetrator is irresponsible, and is carried out with pleasure (Payong, 2023).

According to Oktifa in Emanuel Haru In general, there are 5 (five) types of action *Bullying* that often occurs among school students includes (Ila, Ikhwan, & Irawan, 2023):

- 1) *Bullying*. Verbal *bullying* is an act of bullying carried out using words, statements, namecalling, and psychological pressure that hurts or demeans the victim. Verbal bullying is often conducted unconsciously.
- 2) *Physical Bullying* or Physical Bullying k. Physical *bullying* is an act of bullying that targets a person's physical body and can leave visible marks. eyes and can be easily seen by others, such as scars, bruises or swelling. Physical bullying is not only in the form of hitting or actions that leave marks or wounds on the victim's body, but can also include actions such as blocking the middle of the road, intimidating by bringing

a group, or throwing small objects at the victim (Atika, Arifin, & Jannana, 2021).

- 3) *Social Bullying* : a form of oppression perpetrated by a group against an individual. Examples of social *bullying* include exclusion or indirect intimidation perpetrated by a group. Victims of social *bullying* often have difficulty making friends and isolating themselves.
- 4) *Cyberbullying*, or Cyberbullying is a type of bullying that occurs when using information technology. This type of *bullying* is very common among students. For example the trend of the emergence of *Haters* or people who like to say bad things because they do not like someone on social media is an example of bullying that occurs in cyberspace.
- 5) *Sexual Bullying*. Sexual harassment can also be categorized as *bullying* because the perpetrator has negative motives. Today, there are a growing number of cases of sexual harassment affecting children, including students in schools (Karwadi & Deni Indrawan, 2023).

Bullying *among* students at school certainly has an impact. According to various studies, which were then summarized in the Stop Bullying Book from the Directorate of Elementary Schools, DIRJEN PAUDDIKDASMAN in 2021, the impact of *bullying* on victims is that they often experience (Bowering & Reed, 2021):

- 1) Physical and psychological pain ;
- 2) Decreased self-esteem (*self-esteem*) ;
- 3) Shame, trauma, feeling alone, feeling at a loss ;
- 4) Fear of School ;
- 5) The victim isolates himself from school ;
- 6) Suffering from Social Anxiety ;
- 7) In conditions of acute trauma, suicidal thoughts and mental disorders arise (Supendi, Palah, & Hasanah, 2020).

Perpetrators of *Bullying*, they often experience one condition, namely learning that there is no risk for them if they commit violence, aggression or threat to other children, and when they are adults, the perpetrators have a greater potential to become criminals and will have problems in their social functioning (Rohman & Mentari, 2024). For witnesses who see *Bullying happening*, they can experience unpleasant feelings and severe psychological pressure, feel threatened and afraid of becoming the next victim, and experience a decrease in achievement in class because attention is still focused on how to avoid being a target of bullying rather than academic tasks. (Dasmana, Wasliman, Cepi Barlian, & Yoseptry, 2022).

Character Education and the Role of Collaboration to Build an *Anti-Bullying Attitude*

"Educating and instilling character values such as respect, empathy, courage, and honesty are the foundations for fostering a positive environment (Noviandari, Utami, & Wahyuningsih, 2026). If children have a strong character, they will automatically be able to resist bullying and build healthy relationships." (Rasool, Wang, Tang, Saeed, & Iqbal, 2021).

Principals can play a role, including enforcing discipline and building an inclusive culture. Principals, along with teachers, should serve as role models and supervisors rather than perpetrators or condoners. For example, a school in Surabaya implemented a "Peer Counselor" program where students are trained to be confidants and report *bullying* (Fakhrurrazi, Hamzah, Herryani, Suherlan, & Desy, 2022). For students, the role that can be carried out is to be able and brave enough to reprimand and report incidents of bullying to the Principal or Teacher (Kulsum, Bahrissalim, Khadijah, Fauzan, & Arifin, 2024). Therefore, students are expected to be proactive and not watch when *bullying occur* (Syarnubi, Mansir, Purnomo, Harto, & Hawi, 2021)s.

Documentation Of Community Service Activities Implementation





Figure 1. Documentation Of Community Service Activities Implementation

CONCLUSION

After carrying out the PkM activities, the team concluded that the PkM activities had run well, and the school (Principal and Teachers) and students obtained new useful information and insights by carrying out this PkM activity. It is hoped that in the future a good partnership and cooperation will be established between HKBP Nommensen Pematangsiantar University and the Indonesian Business Polytechnic with Muhammadiyah 55 Kandangan Private Middle School, Simalungun Regency to help improve and enhance the quality of education at Muhammadiyah 55 Kandangan Private Middle School in particular and other schools in general at the local, regional, and national levels. The school and the PkM Team have almost the same views and suggestions, namely that there is a need for further activities in other forms, such as a workshop within the framework of the Anti -Bullying School Strengthening Project.

References

- Atika, A., Arifin, Z., & Jannana, N. S. (2021). Integrated School Management-Character Education Affirmation: A Case Study In Muhammadiyah Wirobrajan 3 Elementary School Yogyakarta. *Al-Tanzim: Jurnal Manajemen Pendidikan Islam*, 5(2), 15–26.
- Baldry, A. C. (2023). Bullying In Schools And Exposure To Domestic Violence. *Child Abuse & Neglect*, 27(7), 713–732.
- Bowering, E., & Reed, M. (2021). Achieving Academic Promotion: The Role Of Work Environment, Role Conflict, And Life Balance. *Canadian Journal Of Higher Education*, 51(4), 1–25. <https://doi.org/10.47678/Cjhe.V51i4.188917>
- Dasmana, A., Wasliman, I., Cepi Barlian, U., & Yoseptry, R. (2022). Implementation Of Integrated Quality Management Strengthening Character Education In Realizing Pancasila Student Profiles. *Ijgie (International Journal Of Graduate Of Islamic Education)*, 3(2), 361–377. <https://doi.org/10.37567/Ijgie.V3i2.1342>
- Fakhrurrazi, F., Hamzah, H., Herryani, H., Suherlan, H., & Desy, D. (2022). Implementation Of Independence Character Education In Madrasah. *Edukasi Islami: Jurnal Pendidikan*

- Islam*, 11(01). <https://doi.org/10.30868/Ei.V11i01.2274>
- Fauzia, Y. R. (2021). Bullying At School: What Are The Motives And Causes. *Proceeding Of The International Conference On Social Sciences And Education (Icsse)*, 3, 13–14.
- Ferdiawan, E., & Putra, W. E. (2013). Esq Education For Children Character Building Based On Phylosophy Of Javaness In Indonesia. *Procedia - Social And Behavioral Sciences*, 106, 1096–1102. <https://doi.org/10.1016/J.Sbspro.2013.12.123>
- Fredy, F., Tembang, Y., Bito, G. S., & Sholikhah, O. H. (2020). Exploration Ethnomathematics Of The Malind Tribe For Character Building In Elementary Schools. *International Journal On Advanced Science, Education, And Religion*, 3(2), 9–20. <https://doi.org/10.33648/Ijoaser.V3i2.58>
- Gaffney, H., Ttofi, M. M., & Farrington, D. P. (2019). Evaluating The Effectiveness Of School-Bullying Prevention Programs: An Updated Meta-Analytical Review. *Aggression And Violent Behavior*, 45, 111–133. <https://doi.org/10.1016/J.Avb.2018.07.001>
- Hart, P. (2022). Reinventing Character Education: The Potential For Participatory Character Education Using Macintyre's Ethics. *Journal Of Curriculum Studies*, 54(4). <https://doi.org/10.1080/00220272.2021.1998640>
- Ila, L. T., Ikhwan, A., & Irawan, M. D. (2023). Implementasi Metode Breadth First Search Pada Sistem Pakar Rekomendasi Gugatan Cerai Di Pengadilan Agama. *J-Sisko Tech (Jurnal Teknologi Sistem Informasi Dan Sistem Komputer Tgd)*, 6(1), 108. <https://doi.org/10.53513/Jsk.V6i1.7419>
- Islam, S., Muharom, F., Annur, F., Senja, A. A., & Alfi, K. Z. (2022). Strengthening Character Education For Gen Z In The Era Of Disruption Through A Personal-Constructive Sufi Approach. *Tadris: Jurnal Pendidikan Islam*, 17(2). <https://doi.org/10.19105/Tjpi.V17i2.6882>
- Karwadi, & Deni Indrawan. (2023). Islamic Religious Education Teacher Strategies In Internalizing Character Values In Madrasah Ibtidaiyah Students. *Jurnal Cakrawala Pendas*, 9(2), 242–249. <https://doi.org/10.31949/Jcp.V9i2.4731>
- Kulsum, U., Bahrissalim, B., Khadijah, S., Fauzan, F., & Arifin, F. (2024). Character-Based Digital Curriculum And Learning: A Case Study In Madrasah Ibtidaiyah And Elementary Schools. *Journal Of Integrated Elementary Education*, 4(2), 274–288. <https://doi.org/10.21580/Jieed.V4i2.23024>
- Lismana, D., & Syukur, Y. (2023). Efforts School Personnel In Overcoming Student Bullying Behavior At Sman 1 Lubuk Sikaping. *Counseling And Humanities Review*, 3(2). Opgehaal Van <http://repository.radenintan.ac.id/eprint/32298>
- Man, X., Liu, J., & Xue, Z. (2022). Effects Of Bullying Forms On Adolescent Mental Health And Protective Factors: A Global Cross-Regional Research Based On 65 Countries. *International Journal Of Environmental Research And Public Health*, 19(4), 2374. <https://doi.org/10.3390/Ijerph19042374>
- Ningsih, T., Yuwono, D., Sholehuddin, M., & Suharto, A. (2021). The Significant Of E-Assessment For Indonesian Literacy With Character Education In Pandemic Era. *Journal Of Social Studies Education Research*, 12(4), 231–256. Opgehaal Van <https://www.learntechlib.org/P/220460/>
- Noviandari, H., Utami, F. P., & Wahyuningsih, E. T. (2026). Integration Of Islamic Education And Character Education: Strategies To Build Moral Integrity In Madrasah Institutions. *Islam In World Perspectives*, 5(1), 123–132.

- Payong, M. R. (2023). Promoting Peace Education By Using The Local Wisdom In Manggarai Culture, East Nusa Tenggara, Indonesia. *Al-Ishlah: Jurnal Pendidikan*, 15(1), 665–674. <https://doi.org/10.35445/alishlah.v15i1.1886>
- Purwati, E. R., Noor, A. H., & Rukanda, N. (2022). The Implementation Of Character Education To Foster Learners'core Value At An-Nur Ibun Community Learning Center. *Journal Of Educational Experts (Jee)*, 4(2), 70–79. <https://doi.org/10.30740/jee.v4i2p70-79>
- Rahmanto, P., Dwikurnaningsih, Y., & Setyorini, S. (2019). Pengembangan Media Komik Untuk Mencegah Perilaku Bullying Siswa Kelas Vii. *Genta Mulia: Jurnal Ilmiah Pendidikan*, 10(2).
- Rahmawati, N. E., Rofiqoh, N., Islahati, L., & Salimi, M. (2019). Build Religious Character Through 5s (Senyum, Sapa, Salam, Sopan, Santun). *Social, Humanities, And Educational Studies (Shes): Conference Series*, 1(2), 308. <https://doi.org/10.20961/shes.v1i2.26730>
- Rasool, S. F., Wang, M., Tang, M., Saeed, A., & Iqbal, J. (2021). How Toxic Workplace Environment Effects The Employee Engagement: The Mediating Role Of Organizational Support And Employee Wellbeing. *International Journal Of Environmental Research And Public Health*, 18(5), 2294. <https://doi.org/10.3390/ijerph18052294>
- Rohman, R., & Mentari, A. (2024). Implementation Of The Strengthening Character Education Policy In Elementary Schools And Madrasah Ibtidiyah. *Jurnal Pendidikan Pkn (Pancasila Dan Kewarganegaraan)*, 5(1), 42–63. [Opgehaal Van https://repository.lppm.unila.ac.id/eprint/53431](https://repository.lppm.unila.ac.id/eprint/53431)
- Sakban, A., Sahrul, S., Kasmawati, A., & Tahir, H. (2018). The Role Of Police To Reduce And Prevent Cyber-Bullying Crimes In Indonesia. *Proceedings Of The 1st International Conference On Indonesian Legal Studies (Icils 2018)*, 36–41. Paris, France: Atlantis Press. <https://doi.org/10.2991/icils-18.2018.7>
- Sari, D. P., Mariyani, Miko, A. T., & Oktviana, A. (2024). An Exploration Of Verbal Bullying Types And The Role Of Bystanders In Affecting Victims' Mental Health. *Tell : Teaching Of English Language And Literature Journal*, 12(2). <https://doi.org/10.30651/tell.v12i2.24192>
- Supendi, P., Palah, & Hasanah, A. (2020). Development Of Character Education Models In Madrasas Through The Establishment Of The Tahajud Prayer. *Jurnal Pendidikan Agama Islam*, 17(2), 101–118. <https://doi.org/10.14421/jpai.2020.172-01>
- Susandi, A. S., Luayyin, R. H., & Dirgayunita, A. (2021). Aktualisasi Diri Untuk Mengurangi Perilaku Bullying Pada Anak. *Jurnal Visi Ilmu Pendidikan*, 13(2), 72–83. [Opgehaal Van https://jurnal.untan.ac.id/index.php/jvip](https://jurnal.untan.ac.id/index.php/jvip)
- Syarifuddin, S., Hendrawansyah, H., & Putra, R. A. (2023). An Analysis Of Verbal Bullying On Students' Interaction And It's Impacts On The Students' Learning Interest At Smp Negeri 1 Palibelo. *Jurnal Ilmiah Mandala Education*, 9(4), 3036–3046.
- Syarnubi, S., Mansir, F., Purnomo, M. E., Harto, K., & Hawi, A. (2021). Implementing Character Education In Madrasah. *Jurnal Pendidikan Islam*, 7(1), 77–94.
- Wagiono, F., Shaddiq, S., & Junaidi, F. (2021). Implementation Of Blended Learning During Covid-19 Pandemic On Civic Education Subjects In Millenial Generation Era. *Edunesia : Jurnal Ilmiah Pendidikan*, 3(1), 36–44. <https://doi.org/10.51276/edu.v3i1.213>
- Wagner, A. (2019). E-Victimization And E-Predation Theory As The Dominant Aggressive Communication: The Case Of Cyber Bullying. *Social Semiotics*, 29(3), 303–318. <https://doi.org/10.1080/10350330.2019.1587832>

- Widiyanthi, D. A. (2017). Media Anti Bullying : Pembimbingan Anak Usia Dini Pada Taman Kanak-Kanak Di Kota Singaraja. *Jurnal Widya Laksana*, 5(1), 29. <https://doi.org/10.23887/Jwl.V5i1.9101>
- Xiao, Y., Jiang, L., Yang, R., Ran, H., Wang, T., He, X., ... Lu, J. (2021). Childhood Maltreatment With School Bullying Behaviors In Chinese Adolescents: A Cross-Sectional Study. *Journal Of Affective Disorders*, 281, 941–948. <https://doi.org/10.1016/J.Jad.2020.11.022>
- Yohanna, L., & Maya, S. (2019). *The Emergence Of Character And Entrepreneurial Spirit Since Childhood*. 65(Icebef 2018), 679–682. Atlantis Press. <https://doi.org/10.2991/Icebef-18.2019.145>
- Zakiah, E. Z., Fedryansyah, M., & Gutama, A. S. (2019). Dampak Bullying Pada Tugas Perkembangan Remaja Korban Bullying. *Focus : Jurnal Pekerjaan Sosial*, 1(3), 265. <https://doi.org/10.24198/Focus.V1i3.20502>
- Zellma, A., Buchta, R., & Cichosz, W. (2022). The (Non)Transgressive Character Of Religious Education For Children And Young People In Polish Schools. *British Journal Of Religious Education*, 44(3), 223–237. <https://doi.org/10.1080/01416200.2021.1887082>

Copyright and License



This is an open access article distributed under the terms of the Creative Commons Attribution 4.0 International License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

© 2024 Daulat Nathanael Banjarnahor, Sepriandison Saragih, Firinta Togatorop, Jan Sardo Pratama Purba

Published by IPI Global Press in collaboration with Inovasi Pratama Internasional Ltd.