

# A qualitative investigation related to increasing teachers' abilities and capabilities in solving problems with the cognitive abilities of urban and rural students in terms of reaching good education

*Najwa Kandau<sup>1</sup>, Riza Yonisa Kurniawan<sup>2\*</sup>, Putri Ulfa Kamalia<sup>3</sup>, Zain Fuadi Muhammad Roziqifath<sup>4</sup> and Mohamad Zuber Bin Abd Majid<sup>5</sup>*

<sup>1,2,3,4</sup>Economic Education, Faculty of Economic and Business, Universitas Negeri Surabaya, Indonesia

<sup>5</sup>Universiti Kebangsaan Malaysia, Bangi Selangor, Malaysia

**Abstract.** The education gap between urban and rural areas was the main problem in all countries, especially in Indonesia. Children in rural areas often have limited access to competent teachers and educational resources. To address this issue, the Indonesian government has made it a priority to improve teacher quality. The methodology of the research followed a qualitative approach which was compared to 24 international journals, specifically from Scopus and Cambridge journals. Furthermore, current news articles were also analysed in order to ensure that the research remains topical. Results highlighted that teacher quality greatly determines students' cognitive performance. This means teachers who are better qualified not only enhance students' grades but also reduce educational inequalities. Nevertheless, there is not just a need to improve teacher quality; rather it should go hand in hand with other improvements like upgrading academic infrastructure as well as increasing community support. The study emphasizes the urgent need for targeted policies aiming at improving rural education, including increased teacher training programs, and provision of better teaching materials, among others and community-based projects. A holistic approach could greatly bridge the education gap between urban and rural places. If these findings are taken into account, then more effective education strategies would be created in Indonesia, thus contributing significantly to both scholarship and policymaking concerning education.

## 1 Introduction

The education gap that happens to the level of urban and rural societies is one of a global issues [1,2], and it also happens in Indonesia [3,4]. Some of the main issues of this gap are the constrained ability of the engine and relevant structures' access to the resources needed

---

\* Corresponding author: [rizakurniawan@unesa.ac.id](mailto:rizakurniawan@unesa.ac.id)

like, adequate facilities and infrastructure which are not properly distributed [5]. The matter of facilities and infrastructure has appeared as an issue that affects different countries [6,7]. At times, some level of access to adequate facilities and infrastructure is often limited, and this was evidenced to have led to the deterioration of the quality the education being provided [8–10]. This includes poor classroom structure, dilapidated structures, most of the schools in a bad state, children and teachers being exposed to extreme weather conditions; lack of laboratory facilities, lack of internet, and no proper technology. Lack of adequate educational facilities will always have an effect on the learning and teaching process whereby students do not have a chance to develop a proper learning experience [11]. Consequently, students' academic performance is relatively low [12]. The same fatalities lead to the emergence of educational inequality between regions with the necessary resources and regions with insufficient infrastructure resources. This also affects the motivation and interest students have in learning new materials, as well as the capacity of the teacher to expound on the content effectively [13,14].

Technology is an influential factor that can foster learning and teaching [15,16]. However, it's also a big issue that rural schools have no access to modern technology which further fosters the gap between urban and rural schooling [17,18]. This is also compounded by the fact that many schools; especially those in the rural areas, have no access to the Internet or with limited technological devices [19]. This results in students in rural areas being in a position where they cannot use internet resources as a tool for learning, cannot engage in distance learning and are outsmarted by students in urban areas in the use of technologies. In this respect, students learning in rural areas are said to be less in academic and cognitive achievements than their counterparts learning in urban areas [20–22]. This results in a cycle of poverty that can hardly be reversed, hence limiting social and economic development in the rural sector [21,23]. The shortage of facilities and infrastructure is linked directly with the quality of teachers and has consequences affecting the attainment of the SDGs stipulated in point 4 for quality education. Another opinion is that the availability of necessary facilities like good school buildings, well-equipped laboratories, and access to modern technology cannot but become components that affect the teaching process [24]. When such facilities are not available the teachers are left struggling hard in an effort to teach or facilitate lessons effectively [25]. For illustration, without adequate laboratory facilities, science teachers are unlikely to provide practical experience that is strongly related to understanding scientific concepts. Similarly, the lack of technology hinders educators from harnessing the potential of digital learning resources that can improve the quality of teaching [26].

The quality of teachers is also affected by their work environment. Teachers in environments with inadequate facilities typically experience more pressure and stress, which in turn can negatively impact their motivation and performance [27]. On the other hand, good facilities allow teachers to teach more effectively and innovatively, which in turn leads to a more qualified education of students [28].

The implications for SDG 4 are huge. SDG 4 is set to ensure that quality education is inclusive [29], fair [30], and the highest level of quality [31], and to support lifelong learning opportunities for everyone [32]. Without adequate facilities and qualified teachers, the goal is difficult to achieve [33]. Inequality of access to quality educational facilities further widens the educational gap between developed and disadvantaged regions [34]. Therefore, investment in improving educational facilities and infrastructure, as well as efforts to improve the quality of teachers, is very important for the realization of SDGs 4 [35]. It also involves teacher training programs and salary incentives for teachers who are willing to work in remote areas [36]. Furthermore, including infrastructure renovation in all education zones. Applied in this way, all can access high-quality education and unlock their full potential in line with the global aspirations of the SDGs.



**Fig. 1.** Sustainable Development Goals

In rural areas, the quality of education often lags behind in urban areas, influenced by several factors. Community participation in supporting education in villages is also still low, with school funding only relying on School Operating Costs (BOS) funds from the government. These various factors addressed above contribute in a way to enhancing a disparity in levels of quality of education between the villages and cities, therefore, arriving at enhancing the quality of education in the villages requires a package deal including now; enhancing facilities, increasing teachers' competency, and enhancing the community participation [37–40].

The educational standards in urban centres are usually higher than in rural areas due to many causes. Different schools in the cities have improved quality structures as far as physical infrastructure like the school structures, information facilities and teaching learning resources are concerned. Also, teachers are more professional in the urban areas and more qualified to teach as well as possess the proper skills in delivery of their lessons. Urban areas are also more integral part of funding education both in funding resources or supervision. This is due to the presence of total facilities, competent teachers and high community participation, which makes the quality of education in urban schools better than that of the rural schools. However, efforts to equalize the quality of education between villages and cities continue to be carried out so that the gap can be minimized [41–44].

A comparison of the quality of education in villages and cities shows that education in cities is better than in villages [45]. Teachers in cities are more professional, educational facilities are more complete, and community participation is better [46]. On the other hand, education in villages faces various challenges such as limited facilities, unprofessional teachers, and lack of community participation [47].

While the novelty of this research was exploration brings in a brand-new way of learning through the development and evaluation of particular training programs that are meant to make the teachers with advanced problem-solving skills. The innovative part is its adaptive course of action, which aside from honing the problem-solving skills in educators, also is in sync with the developmental stages of different types of students, and is thereby, empowering a more comprehensive and efficient learning environment. So that this study highlights the importance of overcoming the gap in access to modern technology in the teaching and learning process between urban and rural areas [48]. Lack of access to technology in rural areas exacerbates educational inequality, causing students in rural areas to lag behind in terms of academic and cognitive achievement compared to students in urban areas [49]. This gap not only hinders the development of education but also prolongs the cycle of poverty which negatively impacts social and economic development in rural areas [50]. Through the use of NVivo, this research is expected to generate important insights into the circumstances,

difficulties, and prospects surrounding teacher competencies in rural and urban areas of Indonesia. The conclusions of the study are believed to help practitioners, scholars, and other relevant stakeholders maximize the potential of teachers for the advancement and sustainability of Indonesia's education.

## 2 Research Methodology

Based on Kostere & Kostere [51] a qualitative approach is a research procedure that produces descriptive data in the form of written or spoken words from the people or sources observed [52]. In a qualitative approach, researchers not only focus on collecting data that can be calculated, but also on collecting data in the form of information, perceptions and subjective experiences from research participants [53].

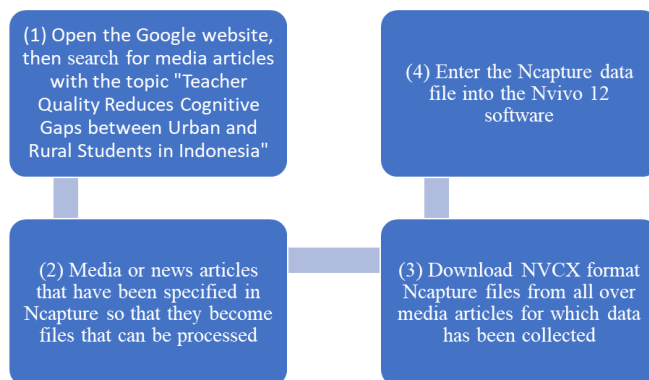
This research uses a qualitative approach to explore how improving teacher quality can reduce the cognitive gap between urban and rural students in Indonesia [54]. This research method involves 24 document analyses. Data were analyzed using the NVivo 12 qualitative analysis method to identify themes and categories relevant to the research. Analysis is carried out by identifying and categorizing data into themes related to the research, and then developing a theory that underlies the research.

**Table 1.** Database Media

Keywords	Year	Database Media
Good Quality	2023	<a href="https://kumparan.com/muhammad-irfan-effendi/kondisi-guru-di-indonesia-kuantitas-dan-kualitas-21fh2Df5Ot8">https://kumparan.com/muhammad-irfan-effendi/kondisi-guru-di-indonesia-kuantitas-dan-kualitas-21fh2Df5Ot8</a>
	2017	<a href="https://www.worldbank.org/en/results/2017/12/22/improving-education-quality-in-indonesia-poor-rural-and-remote-areas">https://www.worldbank.org/en/results/2017/12/22/improving-education-quality-in-indonesia-poor-rural-and-remote-areas</a>
Rural	2023	<a href="https://www.kompasiana.com/hariskhoironi7694/65750767c57afb4cf56a10b3/ini-alasan-kualitas-guru-di-indone">https://www.kompasiana.com/hariskhoironi7694/65750767c57afb4cf56a10b3/ini-alasan-kualitas-guru-di-indone</a>
		<a href="https://www.cgdev.org/blog/most-out-school-children-are-rural-areas-education-svsystems-must-serve-them-better">https://www.cgdev.org/blog/most-out-school-children-are-rural-areas-education-svsystems-must-serve-them-better</a>
Teacher	2024	<a href="https://finance.detik.com/berita-ekonomi-bisnis/d-7313355/sri-mulyani-bicara-kualitas-guru-ri-ini-tantangan-besar-kita">https://finance.detik.com/berita-ekonomi-bisnis/d-7313355/sri-mulyani-bicara-kualitas-guru-ri-ini-tantangan-besar-kita</a>
	2018	<a href="https://global.chinadaily.com.cn/a/201806/08/WS5b19c4f2a31001b82571eccb.html">https://global.chinadaily.com.cn/a/201806/08/WS5b19c4f2a31001b82571eccb.html</a>
Indonesia	2024	<a href="https://ajaib.co.id/simpkb-kualitas-guru-indonesia/">https://ajaib.co.id/simpkb-kualitas-guru-indonesia/</a>
	2020	<a href="https://blogs.worldbank.org/en/eastasiapacific/hard-truth-challenges-primary-education-rural-and-remote-indonesia">https://blogs.worldbank.org/en/eastasiapacific/hard-truth-challenges-primary-education-rural-and-remote-indonesia</a>
Disparity	2023	<a href="https://www.kompasiana.com/salmaannazhira2832/656594bd12d50f257c282fb2/kesenjangan-pendidikan-dampak-pendidikan-di-kota-dan-desa">https://www.kompasiana.com/salmaannazhira2832/656594bd12d50f257c282fb2/kesenjangan-pendidikan-dampak-pendidikan-di-kota-dan-desa</a>
		<a href="https://borgenproject.org/child-illiteracy-in-indonesia/">https://borgenproject.org/child-illiteracy-in-indonesia/</a>
Urban	2024	<a href="https://theconversation.com/fakta-lain-dari-data-pisa-2022-kesenjangan-pendidikan-antara-desa-dan-kota-di-indonesia-218056">https://theconversation.com/fakta-lain-dari-data-pisa-2022-kesenjangan-pendidikan-antara-desa-dan-kota-di-indonesia-218056</a>
	2020	<a href="https://doi.org/10.2991/978-2-494069-05-3_41">https://doi.org/10.2991/978-2-494069-05-3_41</a>
Quality	2024	<a href="https://www.antaranews.com/berita/3952878/pj-bupati-muba-dirikan-pusat-belajar-guru-di-desa-perairan">https://www.antaranews.com/berita/3952878/pj-bupati-muba-dirikan-pusat-belajar-guru-di-desa-perairan</a>
	2022	<a href="https://doi.org/10.24815/siele.v9i1.21239">https://doi.org/10.24815/siele.v9i1.21239</a>
Government	2023	<a href="https://www.kompasiana.com/kenangash/6545c55cedff7635d876ced2/kesenjangan-pendidikan-pendidikan-di-desa-dan-kota-tidak-bisa-dibandingkan-lagi">https://www.kompasiana.com/kenangash/6545c55cedff7635d876ced2/kesenjangan-pendidikan-pendidikan-di-desa-dan-kota-tidak-bisa-dibandingkan-lagi</a>
	2021	<a href="https://doi.org/10.15354/bece.21.ar036">https://doi.org/10.15354/bece.21.ar036</a>

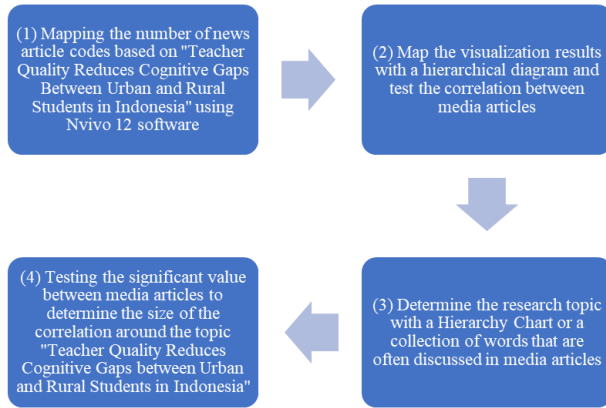
Keywords	Year	Database Media
Education	2023	<a href="https://riaupos.jawapos.com/opini/2253682373/peningkatan-guru-yang-berkualitas-dan-merata-di-provinsi-riau">https://riaupos.jawapos.com/opini/2253682373/peningkatan-guru-yang-berkualitas-dan-merata-di-provinsi-riau</a>
	2021	<a href="https://doi.org/10.29333/iji.2021.14245a">https://doi.org/10.29333/iji.2021.14245a</a>
Students	2024	<a href="https://bungko.desa.id/berita/daerah-diminta-perbaiki-kualitas-guru-kempanrb-buka-formasi-khusus-pada-pendaftaran-cpns-2024/">https://bungko.desa.id/berita/daerah-diminta-perbaiki-kualitas-guru-kempanrb-buka-formasi-khusus-pada-pendaftaran-cpns-2024/</a>
	2023	<a href="https://doi.org/10.1016/j.techsoc.2023.102404">https://doi.org/10.1016/j.techsoc.2023.102404</a>
Low	2023	<a href="https://megapolitan.kompas.com/read/2023/10/11/18111311/tingkatkan-akses-dan-kualitas-pendidikan-disdik-dki-jalankan-jakarta?page=all">https://megapolitan.kompas.com/read/2023/10/11/18111311/tingkatkan-akses-dan-kualitas-pendidikan-disdik-dki-jalankan-jakarta?page=all</a>
	2019	<a href="https://doi.org/10.1017/9781108765015">https://doi.org/10.1017/9781108765015</a>
Higher	2024	<a href="https://news.detik.com/berita/d-7199650/waka-mpr-dorong-peningkatan-kompetensi-guru-untuk-cetak-generasi-unggul">https://news.detik.com/berita/d-7199650/waka-mpr-dorong-peningkatan-kompetensi-guru-untuk-cetak-generasi-unggul</a>
	2021	<a href="https://doi.org/10.1192/j.eurpsy.2021.718">https://doi.org/10.1192/j.eurpsy.2021.718</a>

The various data in the media database table in Table 1 are then analyzed using the following analysis techniques in Figure 1 related to the data collection technique diagram.



**Fig. 2.** Data Collection Technique Diagram

The first step in data collection is to conduct a search on the Scopus and Cambridge websites with the title 'Quality of Teachers Reduces Cognitive Disparities between Urban and Rural Students in Indonesia.' Relevant articles or news are then used by Ncapture so that the file can be processed. Next, an output file download in NVCX format is carried out from all media articles that have been collected. Then, enter the files from Ncapture into the NVivo 12 software for further analysis.

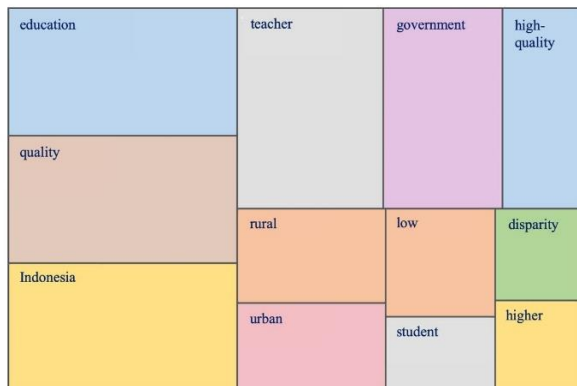


**Fig. 3.** Research Flowchart

Data collection began with mapping the number of news article codes based on the topic "Teacher Quality Reduces Cognitive Gaps Between Urban and Rural Students in Indonesia", the data analysis process then using Nvivo 12 software. Then, the visualization results of the mapping were mapped with a hierarchical diagram and tested for correlation between media articles. The next process is to determine the research topic using a Hierarchy Diagram or a collection of words that are often discussed in media articles. Finally, a significant value test between media articles was carried out to determine the size of the correlation around the topic, in order to gain a deeper understanding of the relationship between teacher quality and cognitive gaps between students in urban and rural areas in Indonesia.

### 3 Result and Discussion

Based on Figure 4, it can be seen that the words that often appear and are discussed in the media are; education, teacher, quality, government, rural, urban, Indonesia, lower, students, higher dan disparity.



**Fig. 4.** Hierarchy Chart

The results of this study show that teacher quality has a significant impact on students' cognitive achievement, both in rural and urban areas in Indonesia. Data analyzed from various media sources indicate that teachers with higher professional qualifications tend to improve students' cognitive achievement more significantly than less qualified teachers. All

these findings are tested in different regions in which policy based on the development of teacher quality is considered one of the primary goals in education.

Also, the study established that there existed a significant correlation in favour of moderate and high achievers who get assisted by highly qualified teachers as opposed to low achievers. This suggests that efforts to upgrade the quality of teachers mean a positive change in students achievement not only for the students at large but also means diminishing the existing cognitive gap between average and low performers. These findings raise a need to tailor the strategies used for teacher training and development.

The study also shows a very shocking aspect of quality difference between the rural and urban areas with urban students enjoying fairly better quality and quality teachers more so due to better teaching facilities within their regions. This means that there is a need for more assuming policies in the recruitment and retention of quality teachers and the enhancement of education facilities in these areas.

The discussion also reveals that professional teacher development is vital in the endeavours to close the education achievement gap between rural and urban students in Indonesia. Teacher capacity may be enhanced by constant professional development, giving the right motivation, and giving the relevant tools with which a teacher teaches. Education policies should strive to increase teacher competence coverage in order to provide any student regardless of his or her geographical location equal chances of success in education [55–59].

Moreover, the study reveals that any initiative to increase teacher quality must go hand in hand with education facilities in rural areas. The facilities provided to rural schools are generally minimal, and this drags the capacity of teachers to properly teach their students [60–63]. Hence, the government has to make corresponding adjustments to efforts made in the enhancement of the quality of teachers and other physical facilities and sources available in education [64–68].

The study also emphasizes the importance of community participation in supporting education in rural areas. Community support, in the form of funding, resources, and supervision, can play a crucial role in improving the quality of education [69–73]. Therefore, programs that encourage community involvement in education should be prioritized as part of a comprehensive effort to enhance education quality nationwide.

## **4 Conclusion**

In conclusion, this paper contributes in exploring the extent to which teacher quality affects the gap in terms of current students' achievement between rural and urban students in Indonesia. Hence the findings suggest that attainment of higher quality teachers could enhance or rather promote the mental health of learners and also diminish the gap in students' performance. However, the outcomes achieved through attempts to raise teacher quality have to be complemented by the improvement of educational facilities and community support. The study also feels that there is a dire need for the enhancement of policies that will target the improvement of education quality in the existing rural institutions. Such policies should feature rewards and incentives for teachers, better and upgraded schools and other programs that promote community participation. Thus, the difference between the rural and urban areas in terms of education attainment level can be bridged thoroughly. Altogether, these findings extend knowledge in the education literature and policy in Indonesia and can be used as reference points to construct more efficient education policies. It is recommended that future researchers include more literature and media sources from other countries to contribute more cross-sectional inclusion to understand better the qualities of teachers in fostering education.

## References

1. H. Xia, H. Yu, S. Wang, and H. Yang, *Journal of Innovation & Knowledge* **100505** (2024)
2. H. Luo and Q. Hu, *Econ Anal Policy* **81**, 494 (2024)
3. Muhaimin, Asrial, A. Habibi, A. Mukminin, and P. Hadisaputra, *Heliyon* **6**, 04631 (2020)
4. M. Hardhantyo and Y. C. Chuang, *Pediatr Neonatol* **62**, 80 (2021)
5. C. Barra, M. Grimaldi, A. Muazzam, O. Troisi, and A. Visvizi, *Socioecon Plann Sci* **93**, 101904 (2024)
6. K. Sasai, L. E. Chouinard, G. J. Power, D. Conciatori, and N. Zufferey, *Infrastructure Asset Management* (2024)
7. I. Ketu and M. A. K. Wirajing, *Research in Globalization* **8**, 100217 (2024)
8. M. N. Fuseini, *Heliyon* **10**, e33659 (2024)
9. R. Donkoh, W. O. Lee, A. T. Ahoto, J. Donkor, P. O. Twerefoo, M. K. Akotey, and S. Y. Ntim, *Heliyon* **9**, e21325 (2023)
10. H. Qiao, X. Tong, L. Han, and S. Wang, *Resources, Conservation & Recycling Advances* **23**, 200221 (2024)
11. S. Jaouaf, B. Bensaad, and M. Habib, *Energy Reports* **11**, 3653 (2024)
12. J. R. Hanaysha, F. B. Shriedeh, and M. In'airat, *International Journal of Information Management Data Insights* **3**, 100188 (2023)
13. K. Ćwirynkało, M. Parchomiuk, U. Bartnikowska, B. Antoszevska, and K. Barzykowski, *International Journal of Intercultural Relations* **101**, 102005 (2024)
14. H. Sharif-Nia, K.-A. Allen, G. Arslan, J. Reardon, L. She, N. Ghahrani, P. Rahmatpour, and F. K. Fomani, *Teaching and Learning in Nursing* **19**, e5 (2024)
15. G. Kang and D. Sinn, *The Journal of Academic Librarianship* **50**, 102856 (2024)
16. K. Anubhav, A. K. Dwivedi, and K. Aashish, *The International Journal of Management Education* **22**, 100993 (2024)
17. D. P. Alamsyah, J. M. Parulian, and A. Herliana, *Procedia Comput Sci* **216**, 266 (2023)
18. E. E. O. Opoku, A. O. Acheampong, and O. A. Aluko, *J Policy Model* **46**, 304 (2024)
19. E. Loehmer, S. Smith, J. McCaffrey, and J. Davis, *J Nutr Educ Behav* **50**, 75 (2018)
20. F. Lyubing, Z. Lijun, and Y. Xianguo, *J Asian Econ* **93**, 101752 (2024)
21. S. Y. Ozden, H. Yang, H. Wen, and V. H. Shinas, *Social Sciences & Humanities Open* **9**, 100869 (2024)
22. J. Campos-González and K. Balcombe, *Econ Model* **131**, 106616 (2024)
23. K. Inoue, T. E. Seeman, R. Nianogo, and Y. Okubo, *The Lancet Regional Health - Americas* **25**, 100565 (2023)
24. M. N. Asadullah, A. Webb, and K. M. M. Islam, *Int J Educ Dev* **106**, 103015 (2024)
25. J. O'Connor, S. Ludgate, Q.-V. Le, H. T. Le, and P. D. P. Huynh, *Int J Educ Dev* **103**, 102942 (2023)
26. K. Craik and A. J. Collings, *Science & Justice* **62**, 814 (2022)
27. J. Urwick and S. Kisa, *Int J Educ Dev* **36**, 72 (2014)
28. I. M. Martínez-León, I. Olmedo-Cifuentes, and J. Soria-García, *Teach Teach Educ* **144**, 104580 (2024)



29. C. Ydesen and M. Elfert, *Int J Educ Dev* **103**, 102932 (2023)
30. S. J. Greenland, M. Saleem, R. Misra, N. Nguyen, and J. Mason, *J Environ Manage* **344**, 118328 (2023)
31. M. Oketch, *Int J Educ Dev* **106**, 102999 (2024)
32. F. Menashy and Z. Zakharia, *Int J Educ Dev* **103**, 102934 (2023)
33. V. Lentini, G. Gimenez, and J. Valbuena, *Econ Anal Policy* **82**, 831 (2024)
34. S. Singh, U. S. Singh, and M. Nermend, *Procedia Comput Sci* **207**, 1970 (2022)
35. M. M. Joseph and T. T. Ndeskoi, *International Journal of Educational Management* **38**, 1204 (2024)
36. D. K. Evans and A. Mendez Acosta, *Econ Educ Rev* **95**, 102430 (2023)
37. M. V. Rabapane, (2020)
38. C.-N. Duc, P.-N. Thi, T. Hoang, H.-L. Dinh, L.-N. Hong, and T.-N. The, *Cogent Education* **9**, 2133889 (2022)
39. Y. Zhao, M. Zhao, and F. Shi, *Journal of the Knowledge Economy* **1** (2023)
40. Turwelis, A. Komariah, I. Rykova, D. Shestakov, M. Hasan, D. A. Kurniady, V. Grebennikova, L. Shcherbatykh, M. Kosov, and O. Dudnik, *Sustainability* **14**, 8442 (2022)
41. J. Zhu and Y. Guo, *Cities* **122**, 103539 (2022)
42. M. Chen, Y. Zhou, X. Huang, and C. Ye, *Land (Basel)* **10**, 207 (2021)
43. D. Lagakos, *Journal of Economic Perspectives* **34**, 174 (2020)
44. H. Luo, M. Zuo, and J. Wang, *Educational Technology Research and Development* **70**, 1125 (2022)
45. Z. Chen, H. Yang, P. Ye, X. Zhuang, R. Zhang, Y. Xie, and Z. Ding, *Ecol Indic* **166**, 112376 (2024)
46. P. C. Martins, L. Tinoca, and M. G. Alves, *International Journal of Educational Research Open* **7**, 100368 (2024)
47. Y. Joshi, S. Suman, and H. Bharti, *Mater Today Proc* (2023)
48. R. Parthiban, R. Sun, I. Qureshi, and S. Bandyopadhyay, *The Journal of Strategic Information Systems* **33**, 101836 (2024)
49. J. Badr, A. Motulsky, and J.-L. Denis, *Health Policy (New York)* **146**, 105122 (2024)
50. C. Sun, A. Khan, and Y. Ren, *J Clean Prod* **425**, 138941 (2023)
51. S. Kostere and K. Kostere, *The Generic Qualitative Approach to a Dissertation in the Social Sciences: A Step by Step Guide* (Routledge, 2021)
52. A. Sevilla-Liu, *J Contextual Behav Sci* **30**, 210 (2023)
53. Z. Pajalic, S. E. G. Olsen, A. Hamre, B. S. Strøm, C. Clausen, D. Saplacan, and G. Kulla, *Public Health in Practice* **7**, 100470 (2024)
54. J. Hong, W. Liu, and Q. Zhang, *J Comp Econ* (2024)
55. A. Kulal, S. Dinesh, N. Abhishek, and A. Anchan, *International Journal of Educational Management* (2024)
56. J. Liu, P. Peng, B. Zhao, and L. Luo, *Educ Psychol Rev* **34**, 2867 (2022)
57. S.-H. Ham, W. Liao, and Y. Zhou, *International Journal of Inclusive Education* **1** (2022)
58. J.-B. M. B. Sanfo and I. Malgoubri, *Int J Educ Dev* **99**, 102759 (2023)

59. L. Crouch, C. Rolleston, and M. Gustafsson, *Int J Educ Dev.* **82**, 102250 (2021)
60. J. Li and E. Xue, *Educational Philosophy and Theory* **53**, 1295 (2021)
61. D. Goldhaber, K. O. Strunk, N. Brown, N. Naito, and M. Wolff, *AERA Open* **6**, 2332858420951833 (2020)
62. S. Stenman and F. Pettersson, *The International Journal of Information and Learning Technology* **37**, 87 (2020)
63. M. T. Frahm and M. Cianca, *The Rural Educator* **42**, 1 (2021)
64. V. O. Ochieng and R. M. Gyasi, *E-Learning and Digital Media* **18**, 105 (2021)
65. H. Tran and D. Smith, *Research in Educational Administration and Leadership* **5**, 870 (2020)
66. C. P. Lim, S. Ra, B. Chin, and T. Wang, *EMI Educ Media Int* **57**, 87 (2020)
67. A. A. Tijani and N. J. K. Abdullahi, *International Journal of Educational Management* **18**, (2020)
68. S. M. Indrawati and A. Kuncoro, *Bull Indones Econ Stud* **57**, 29 (2021)
69. J. Surjanti, A. F. Prakoso, R. Y. Kurniawan, N. C. Sakti, and E. I. Nurlaili, *Educ. Sci. J.* **24**, 104 (2022)
70. L. Hakim, M. K. Anwar, R. Y. Kurniawan, and T. Pahlevi, *Int. J. Instr.* **13**, 117 (2020)
71. R. Y. Kurniawan, N. Trisnawati, Y. Soesatyo, and O. Jusoh, *Int. J. Sup. Chain. Mgt.* **8**, 802 (2019)
72. L. Hakim, W. T. Subroto, and R. Y. Kurniawan, *Int. J. Control Theory Appl.* **8**, 1645 (2015)
73. L. Hakim, Y. Soesatyo, L. M. Dwiharja, A. F. Prakoso, R. Y. Kurniawan, N. Marlana, and I. Widayati, *J. Teach. Int. Bus.* **29**, 161 (2018)