

A Research on Diversified Applications of Technological Education in the Development of Rural District Community Development Associations [†]

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Abstract: Due to the rapid innovative applications of technological education as a result of the swift development and popularity of telecommunication and wireless technologies, ever-more diversified methods of technological education play a critical role in various education and lecturing activities, without time and distance restrictions. Currently, in order to bridge the urban–rural development gap, the Taiwanese Government has introduced a lot of policies to encourage teenagers to return their hometowns; however, these policies have not achieved their goals, as the most of Taiwanese community development associations faced scarcities of professional knowledge without any educational support during the development of their various schemes, such as economic development, environmental protection, cultural heritage, public services, etc. As a result, local development depends on entire community development associations, especially in the most mountain regions of Taiwan. Moreover, community development associations have a lot of social responsibilities, such as age-related caring activities, driving local economies and industrial development, environmental protection and education, maintaining and developing traditional cultures and arts, etc. Due to the digital characteristics of technological education, most Taiwanese rural community development associations are able to obtain professional information and data about courses without space and time restrictions. Thus, after strengthening and satisfying professionals’ demands, local economies will achieve growth and, therefore, younger persons would be encouraged to stay their original area, thus stimulating the development of rural community development associations. Eventually, the positive development cycle is predicted to increased and, as a result, the urban–rural disparities will be directly diminished by the diversified application of technological education in Taiwan.

Keywords: urban–rural disparities; technological education; community development association



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1. Introduction

Here is an introduction to the human and physical geography of Taiwan: (1) area: 36,000 square kilometers; (2) population: 23 million; (3) capital: Taipei City; (4) main ethnic group: Chinese; (5) spoken languages: Mandarin, Taiwanese, and Hakka; and (6) religion: Buddhism, Taoism, Christianity, and Islam. All together, the Taiwanese total land area range is approximately 36,000 square kilometers; its shape is similar to a traditional Chinese tobacco leaf that is narrow at both ends. Taiwan is located near to the southeastern coast of mainland Asia, being separated from Mainland China by the Taiwan Strait, while also bordering the western edge of the South China Sea and the Pacific Ocean. Its other island neighbors include Japan to the north and the Philippines to the south. In terms

of temperature, Taiwan is suitable for human living and traveling because the island's annual average temperature is 22 degrees Celsius, with lowest temperatures ranging from 12 to 17 degrees Celsius (54–63 Fahrenheit). This hospitable climate is associated with Taiwan's elevated terrain; the highest mountain is the Jade Mountain, which is over 3000 m high, and there are a total of 268 mountains on the island of Taiwan. To reduce the population loss and urban–rural disparities between the majority of large cities (e.g., Taipei Taichung, Tainan, and Taitung) and rural areas, the Executive Yuan, which is the most senior government department, instituted a series of development programs and created national budgets to encourage Taiwanese citizens to “live and work in peace and contentment”, as well as to ensure “continuous reproduction breed in an endless succession” and “balanced development in Taiwan”. One of these regulations and laws is Article 12 of the Regulations on Community Development Work, which outlined the essential rules governing of Taiwanese community development associations. Based on the basic goals of community development association outlined in Article 12 [1] of the Regulations on Community Development Work, these projects, when using government funds, must respect the government's policies.

By creating a comprehensive survey of technological education research [2–6] in association with a series of diversified applications, technological education has been applied in formal and informal educational systems, such as online education, massive open online courses (MOOCs), digital lectures, and temporary teaching method used during periods of global disease transmission, such as Severe Acute Respiratory Syndrome (SARS) and Coronavirus Disease (COVID-19) outbreaks, because the most critical characteristics of technological education can directly break through space and time restrictions. Continuously, most professionals are able to conveniently upload their information, data, and video courses onto the various technological education platforms at anytime and anywhere. Moreover, the learners are able to easily view and download professional information, data, and video courses to gain diversified professional knowledge [7–11]. Regarding the development and growth of Taiwanese community development associations, there are five critical barriers to overcome, which are:

(1) Population movement: due to economic underdevelopment of Taiwanese rural community development associations, most younger people leave their hometowns in order to make more money and pursue a higher life quality. Unfortunately, this population movement has, eventually, resulted in the ageing of rural populations.

(2) Long-term infrastructure underdevelopment: as rural populations migrated to cities, the Taiwanese Government prioritized using resources to improve infrastructure in urban areas without considering rural areas.

(3) Resource backward: due to the long-term urban–rural economic and infrastructure disparities, rural areas became the overlooked regions in terms of the Taiwanese Government's allocation of budgets and resources.

(4) Age-related budget requirements: due to their ageing populations, most rural areas require larger budgets and resources to support social schemes that support the elder residents, such as medical support, etc.

(5) Lack of environmental protection and education: due to long-term resource misallocation, most Taiwanese rural governments must use their entire budgets to maintain the local population's basic needs, which resulted in environmental protections and education being ignored in budget spending lists.

2. Conceptual Literature

According to the Article 12, “The community development associations shall devise community development plans, prepare budgets and actively promote community development according to community characteristics and the needs of residents, in addition to being in line with government policies and projects originally designed by the community.” In particular, the most important contents of the Article 12 of the community development associations are its key principles, which are defined as follows: (1) establishing or con-

structing community development association centers; (2) strengthening the environment and improving sanitation in community development associations; (3) maintaining roads and gutters in community development associations; (4) building and improving infrastructure; (5) greening and beautifying community development associations; (6) the construction of public facilities managed by community development associations; (7) creating funds for community development associations; (8) providing social welfare; (9) constructing nurseries; (10) developing local businesses; (11) creating critical measures to preserve the ethos of Taiwanese society and advocate and promote models of public etiquette; (12) preserving and promoting rural culture and traditional public crafts; (13) building traffic safety infrastructure; (14) building community pact-related infrastructure; (15) organizing local civil defense; (16) funding traditional art clubs and local sports teams; (17) funding community senior citizens' clubs; (18) establishing educational classrooms; (19) creating volunteer service teams; (20) establishing community educational services and local libraries; (21) advancing various community-wide activities; (22) enforcing the community disaster assistance, reporting, and prevention drills; and (23) providing other matters related to the spiritual and ethical development of communities [12–16].

3. Conclusions and Future Direction

Due to the rapid innovative applications of technological education following the swift development and popularity of telecommunication and wireless technologies, ever-more diversified methods of technological education play a critical role in various education and lecturing course, lacking all time and distance restrictions. Currently, in order to bridge the urban–rural development gap, the Taiwanese Government has implemented a lot of policies to encourage teenagers to return to their hometowns.

Therefore, this research cross-utilized the preliminary research on the reduction in urban–rural disparities in community development and found that, based on a series of literature reviews, the geographical condition is the most critical factor for several reasons: (1) Taiwan's mountainous terrain resulted in the greatest infrastructure-building projects focusing on cities; (2) most Taiwanese rural community development associations have to confront economic underdevelopment themselves, despite needing more significant economic development than most Taiwanese urban community development associations because the urban developments are prioritized in budgets; (3) most young people of rural origin prefer to move to cities to make money and achieve life development, with Taiwanese rural community development associations needing more younger people to stay in rural community development associations to drive development and growth and diminish the crisis of ageing populations; (4) most professional lecturers and educators do not want to leave cities without comfortable and convenient public transportation, yet Taiwanese rural community development associations need these professionals to assist their development; and (5) the majority of Taiwanese rural community development associations do not have access to professional information and data services, despite needing this information and data more definitely than Taiwanese urban community development associations.

Significantly, political administrators did not achieve these goals as most Taiwanese community development associations experienced scarcities of professional knowledge without any educational support while carrying out their various activities, such as economic development, environmental protection, cultural heritage, public services, etc., as shown in Figure 1.

As a result, the local development depends on entire community development associations, especially in the most mountain regions of Taiwan. Moreover, the community development associations provide a lot of social responsibilities, such as age-related caring activities; support for local, economic, and industrial development; environmental protection and education; maintaining and developing the traditional cultures and arts, etc. Therefore, due to the digital characteristics of technological education, most Taiwanese rural community development associations are able to obtain professional information and data about courses without space and time restrictions. Thus, after strengthening and

satisfying professional demands, local economies will experience growth and younger persons would be encouraged to stay their original area, stimulating the development of rural community development associations. Eventually, the positive development cycle is, predictably, will increase and, as a result, the urban–rural disparities will be directly diminished by the diversified application of technological education in Taiwan.

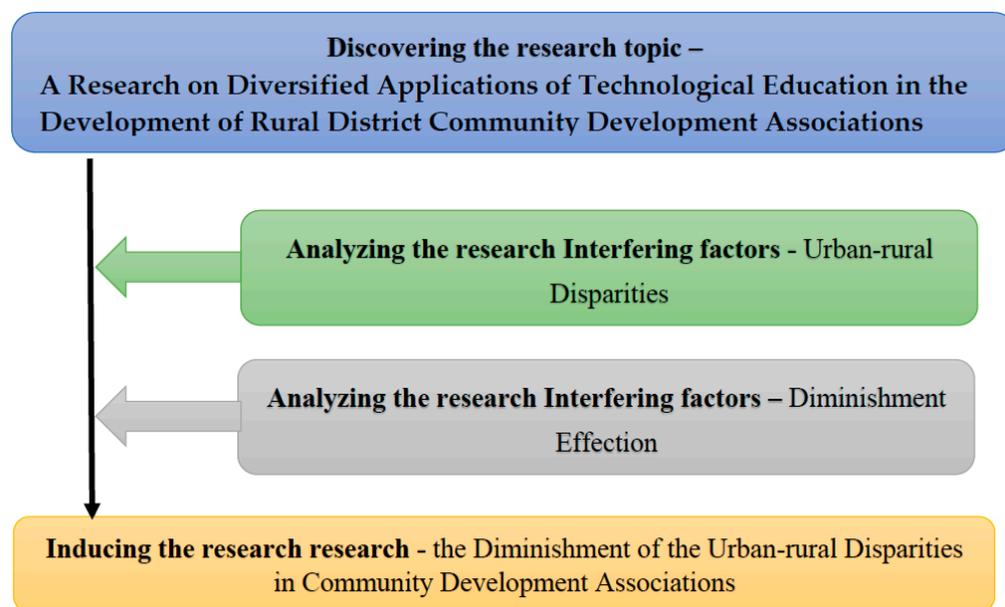


Figure 1. Main research concept.

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References

1. *The Article 12 of the Regulations on Community Development Work*; Ministry of Health and Welfare: Taipei, Taiwan, 2014.
2. Hsieh, Y.M. Interdisciplinarily Exploring the Most Potential IoT Technology Determinants in the Omnichannel E-Commerce Purchasing Decision-Making Processes. *Appl. Sci.* **2020**, *10*, 603. [CrossRef]
3. Hsieh, Y.M. The most sustainable niche principles of social-media education in a higher education contracting era. *Sustainability* **2020**, *12*, 339. [CrossRef]
4. Huang, Y.-M.; Hsieh, Y.M.; Usak, M. A Multi-Criteria Study of Decision-Making Proficiency in Student's Employability for Multidisciplinary Curriculums. *Mathematics* **2020**, *8*, 897. [CrossRef]
5. Chan, Y.-K.; Hsieh, M.-Y.; Usak, M. A Concrete Study on Social-Media Connection of Global Literacy Abilities in MOOCs under the Dual Impacts of Lower Birth-Rate and COVID-19. *Sustainability* **2021**, *13*, 2203. [CrossRef]
6. Usak, M.; Hsieh, M.-Y.; Chan, Y.-K. A Concertizing Research on Making Higher Education Sustainability Count. *Sustainability* **2021**, *13*, 2724. [CrossRef]

7. Duran, M.; Usak, M.; Hsieh, M.-Y.; Uygun, H. A New Perspective on Pedagogical Content Knowledge: Intellectual and Emotional Characteristics of Science Teachers. *Rev. De Cercet. Si Interv. Soc. (RCIS)* **2021**, *72*, 9. Available online: <https://www.ceeol.com/search/article-detail?id=959021> (accessed on 23 November 2022). [[CrossRef](#)]
8. Wu, T.-L.; Hsieh, M.-Y.; Min, K.-W.; Yu, M.-T.; Ho, C.-T. Use of Sensor Technologies in Online Courses in Post-COVID-19 Era. *Sens. Mater.* **2021**, *33*, 2045–2062. [[CrossRef](#)]
9. Huang, C.C.; Chan, Y.-K.; Hsieh, M.Y. The Determinants of ESG for Community LOHASism Sustainable Development Strategy. *Sustainability* **2022**, *14*, 11429. [[CrossRef](#)]
10. Chan, Y.-K.; Hsieh, M.Y. An Empirical Study on Higher Education C-ESG Sustainable Development Strategy in Lower-Birth-Rate Era. *Sustainability* **2022**, *14*, 12629. [[CrossRef](#)]
11. Hsieh, Y.-M. Online learning era: Exploring the most decisive determinants of MOOCs in Taiwanese higher education. *Eurasia J. Math. Sci. Technol. Educ.* **2016**, *12*, 1163. [[CrossRef](#)]
12. Hsieh, Y.-M. Employing MCDM methodology to verify correlation between social media and service quality in the dynamic m-commerce era. *J. Internet Technol.* **2018**, *19*, 225. Available online: <https://jit.ndhu.edu.tw/article/view/1674> (accessed on 20 November 2022).
13. Hsieh, Y.-M.; Usak, M. High Education Radical Transformation Era: How Teachers' Competency can Enhance the Students' Employability. *Rev. De Cercet. Si Interv. Soc. (RCIS)* **2020**, *68*, 95. Available online: <https://www.ceeol.com/search/article-detail?id=848474> (accessed on 18 November 2022). [[CrossRef](#)]
14. Huang, Y.-M.; Hsieh, Y.M. An Interdisciplinary Research on Students' Employability in Technology Education to Advance Higher Education Enrollment Sustainability. *Sustainability* **2020**, *12*, 1806. [[CrossRef](#)]
15. Hsieh, M.Y. The Sustainable Development and Strategic Approaches for Contemporary Higher Education. *Sustainability* **2022**, *14*, 12925. [[CrossRef](#)]
16. Huang, C.-C.; Chan, Y.-K.; Hsieh, M.-Y. Preliminary Research on the Sustainable Determinants of Taiwanese Ecotourism with the International Standards. *Int. J. Environ. Res. Public Health* **2022**, *19*, 14489. [[CrossRef](#)] [[PubMed](#)]

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