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Community Engagement for Realization of Regenerative Village Entrepreneurial Groups: Pathway to Sustainable Banana Entrepreneurship in Alue Krueng Village, Aceh Jaya Regency

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ABSTRACT

Background: Regenerative agriculture and banana-based entrepreneurship can restore soil health and boost the economy in Alue Krueng Village.
Contribution: This initiative assessed community engagement in sustainable farming and banana waste utilization in Aceh Jaya Regency.
Method: The Participatory Action and Action Research (PALAR) method guided community assistance..
Results: The program has transformed the local economy by turning banana waste into viable business ventures and equipping the community with enhanced knowledge and skills in regenerative agriculture. Institutional support and marketing strategies have laid a solid foundation for ongoing growth and success in the banana-based industry.
Conclusion: The program in Alue Krueng Village enhanced local entrepreneurship and economic growth by promoting regenerative banana cultivation and turning agricultural waste into value-added products. It serves as a scalable model for sustainable rural development, emphasizing the importance of institutional support, market strategies, and government involvement in fostering resource-based entrepreneurship.

1. Introduction

Alue Krueng Village in Mukim Pasie Teubee, Pasie Raya Subdistrict, Aceh Jaya Regency, Indonesia, is known for its strategic land area that supports agriculture and plantations. According to data from the 2023 Pasie Raya Subdistrict report, the village covers approximately 492 hectares, with 100 hectares dedicated to paddy fields, 250 hectares to non-paddy agricultural land, and 142 hectares to non-agricultural land. The main commodities cultivated include bananas, rice, corn, and oil palm. With 42 farmers engaged in different types of crops, Alue Krueng Village holds significant potential for agricultural and plantation development.

Despite this potential, much of the agricultural practices in the village remain conventional, leading to environmental degradation, such as soil depletion, reduced biodiversity, and increased carbon emissions, which contribute to climate change [1], [2]. These practices not only threaten long-term food security but also limit the economic benefits that the community can derive from its agricultural output. Currently, most of the banana produce is sold raw without any value addition, resulting in minimal economic gain for the community [3], [4].

The concept of regenerative agriculture offers a solution to these challenges. By emphasizing sustainable practices that restore soil health, enhance biodiversity, and improve ecological resilience, regenerative agriculture can revitalize the agricultural landscape of Alue Krueng Village [5], [6]. Additionally, the development of banana-derived products, such as banana chips or organic fertilizers made from banana waste, can transform agricultural by-products into valuable commodities, thereby boosting local income and reducing waste [7].

However, several obstacles hinder the adoption of regenerative agriculture and entrepreneurship in the village. These include a lack of knowledge, awareness, and motivation among farmers and the community to transition from conventional practices to more sustainable and profitable ventures [8]. To address these challenges, a comprehensive community engagement strategy is needed, focusing on education, capacity building, and institutional support. The formation of entrepreneurial groups centered on banana-based businesses can create a structured pathway for the community to embrace regenerative practices and develop sustainable livelihoods [9]. The active involvement of the village government is crucial in facilitating this transformation by providing support, resources, and motivation to the community [10].

This research aims to address this knowledge gap by proposing the implementation of regenerative agriculture as a solution. By adopting sustainable practices that restore soil health, enhance biodiversity, and improve ecological resilience, the agricultural potential of Alue Krueng Village can be optimized [11]. Moreover, the development of banana-derived products, such as banana chips or organic fertilizers made from banana waste, can increase the economic value of local produce and reduce agricultural waste.

This study offers novelty compared to previous works due to its focus on combining land regeneration with banana-based entrepreneurship development. It provides a holistic approach

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that not only improves environmental conditions but also creates new economic opportunities for the community. This innovation is expected to serve as a model that can be applied to other regions with similar characteristics.

2. Method

The method used in community assistance in Alue Krueng Village is the Participatory Action and Action Research (PALAR) method. This method will target entrepreneurs and the community as the focus of the activities. Several stages in the PALAR method include: Awareness Raising, Extension, Assistance, and Institutionalization [12]. These stages will be directly participated in by the community in Alue Krueng Village [13].

The Participatory Action and Action Research (PALAR) method was chosen for community assistance in Alue Krueng Village due to its strong emphasis on active community involvement and empowerment. Unlike other approaches that may focus more on top-down interventions, PALAR encourages collaboration between researchers and community members, making them key participants in the problem-solving process [12]. This method is particularly suited to the context of Alue Krueng Village because it promotes long-term change by fostering a sense of ownership and responsibility among the local community.

The training program on regenerative agriculture and banana waste utilization was attended by a total of 70 participants from Alue Krueng Village. The participants were introduced to socialization and hands-on training aimed at improving their understanding of sustainable agricultural practices. In addition, out of 50 farmers who participated in the regenerative agriculture training.

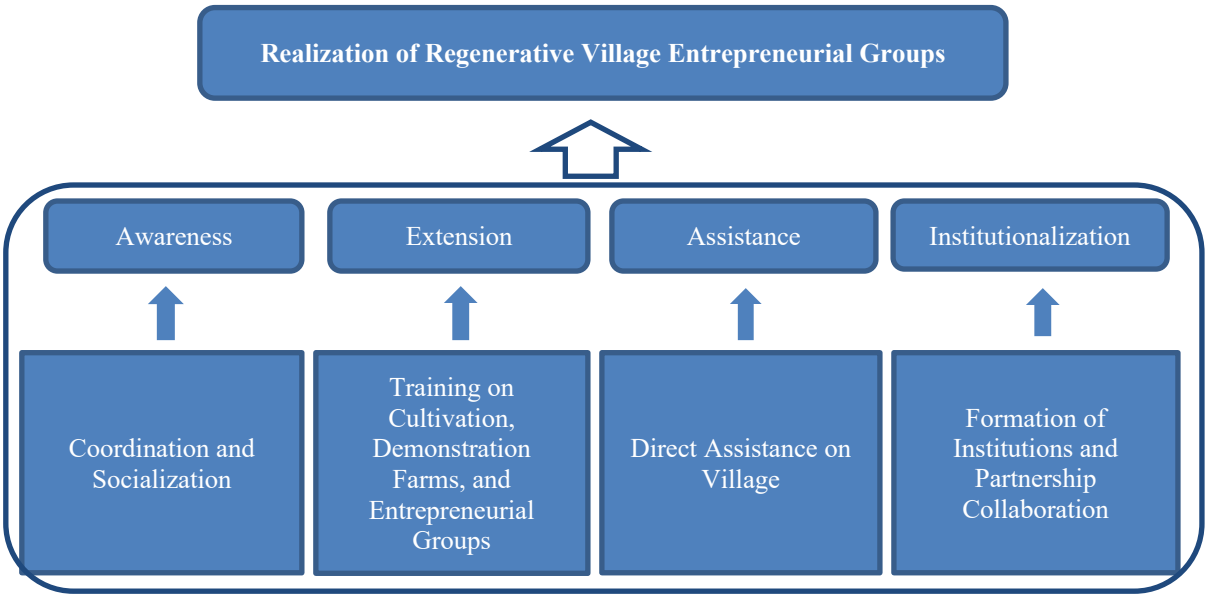

Figure 1. Empowerment Method and Activity Stages

The stages of the activities carried out in the field include (Figure 1 and Figure 2):

1) Based on the identification of community needs, it has been found that there is a significant demand for guidance and empowerment in banana cultivation to develop banana waste and derivative products to boost the economy of Alue Krueng Village.
2) Our target is the community of Alue Krueng Village, specifically banana farmers and entrepreneurs involved in banana waste and derivative products.
3) Our plan includes providing guidance and enhancing understanding of the benefits of regenerative banana cultivation, as well as increasing the value of banana derivative products in Alue Krueng Village.
4) Establishing written agreements for the marketing of banana derivative products.
5) Success indicators will be measured by increasing the number of entrepreneurs to 20, limiting banana growth failure to a maximum of 10%, ensuring each entrepreneur has at least one social media account for digital sales, and developing 3 new banana derivative products and 1 banana waste products that meet licensing requirements and are ready for broad marketing to increase entrepreneur income. Additionally, forming at least 2 banana agriculture institutions in Alue Krueng Village and having at least 1 draft partnership agreement with a marketing partner.
6) The program will be implemented in stages: socialization, training, assistance, and establishment of business institutions in Alue Krueng Village.
7) The Alue Krueng Village Government fully supports the program. The support includes the use of facilities and data required, such as village halls, printers, computers, and office space.
8) Guidance will be provided for transitioning businesses in Alue Krueng Village by applying technology and science to production and marketing.
9) Monitoring and evaluation will be conducted monthly to ensure activities are on track with the initial targets. This also serves as an evaluation of program implementation success.
10) Dissemination and exploration of partnerships with marketing partners will be done, including presentations to local government to report on achievements and explore sustainability potential, in the first, third, and fifth months.
11) After the completion of activities in 2 months, updates on target data and further exploration with partners for market expansion of the developing products will be conducted.

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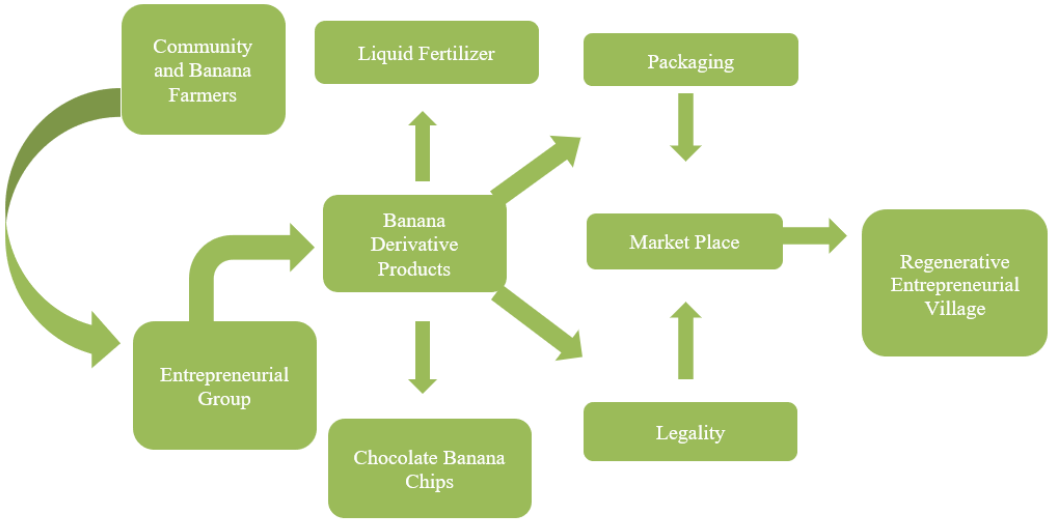

Figure 2. Flowchart Realizing Entrepreneurial Groups in Alue Krueng Village Towards a Regenerative Village

3. Results and Discussion

3.1. Program Result

Before the implementation of the community engagement program in Alue Krueng Village, most of the villagers were still relying on conventional farming methods, particularly in banana cultivation. Although the village had significant potential for banana derivative products and waste utilization, the residents had not fully grasped or understood the concept of regenerative agriculture. The number of entrepreneurs involved in the banana-based business was very limited, and the utilization of banana waste for economically valuable products had not been optimally implemented.

After the program was carried out, there was a significant increase in the participation and involvement of the community in banana-based businesses and waste utilization. Out of 70 participants who attended the socialization and training, 20 people (28.6%) enthusiastically joined the mentoring program. The program resulted in the formation of two entrepreneurial groups: a banana derivative product group and a liquid fertilizer group from banana waste.

A total of 20 farmers (40%) have transitioned to regenerative agriculture, while 30 other farmers (60%) are preparing their land for the transition. The program also spurred local economic growth by creating new products such as liquid organic fertilizer, banana sale, and banana chips, all of which contributed to increasing community income. The banana derivative

product business group generated an income of 3 million rupiahs in August, while the liquid fertilizer business group generated 1.5 million rupiahs during the same period.

The program successfully achieved its goal of increasing income and driving the local economy through banana-based product innovation and the implementation of regenerative agriculture.The students in this program consist of 13 students who gained off-campus learning experience. Each student has converted 20 credits into the MKBM (Merdeka Belajar Kampus Merdeka) activity.

The assistance activities for processing banana waste and derivative products will be conducted directly in Alue Krueng Village to simplify the process. Bananas will be supplied from local farmers' fields as the main raw material for production. Furthermore, the establishment of an Entrepreneurial Group is necessary to facilitate the production of banana waste and derivative products, such as liquid organic fertilizer, banana sale, and banana chips (Figure 3 and Figure 4). Additionally, a marketing strategy needs to be developed, including brand creation, packaging, and obtaining legal permits from the industrial and trade departments to ease the marketing process. These steps aim to support a creative and innovative community in establishing Alue Krueng Village as a Regenerative Entrepreneurial Village.

Figure 3. Training on Making Liquid Fertilizer from Banana Waste

The overall program activities began in June and will continue until November 2024. However, the socialization, training, and mentoring activities took place from July 1 to August 25, 2024. The next activities will focus on marketing support, including creating MoUs with marketing partners, training in promotion and content creation on social media, training in sales through e-commerce, and organizing bazaars or expos.

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Figure 4. Banana derivative products include chocolate banana chips and banana sale (dried bananas).

3.2. Increased Entrepreneurial Activity and Economic Impact

By focusing on regenerative banana cultivation and product development, the program has helped boost the local economy. The introduction of new banana derivative products and the effective marketing of these products have created additional income opportunities for the community. As a result, the financial stability of local households has improved, demonstrating the economic potential of leveraging agricultural waste [14].

Furthermore, the program's emphasis on forming business institutions has facilitated the organization and management of entrepreneurial activities. The establishment of at least two banana agriculture institutions has provided a structured approach to overseeing and supporting banana-related enterprises. This institutional framework has been crucial in sustaining and expanding entrepreneurial activities in the village [15].

The success in achieving the set indicators, such as limiting banana growth failure to 10% and having entrepreneurs engage in digital sales through social media, highlights the effectiveness of the program's implementation strategies. These outcomes underscore the program's positive impact on enhancing the economic well-being of Alue Krueng Village.

Overall, the results reflect a significant transformation in the local economy, driven by the successful integration of banana waste and derivative products into viable business ventures.

3.3. Enhanced Community Knowledge and Capacity Building

The program has substantially improved the community's knowledge and capacity in regenerative banana cultivation. The guidance and training provided have enhanced the understanding of the benefits and techniques of regenerative agriculture. This knowledge has empowered local farmers to adopt more sustainable farming practices, contributing to improved soil health and reduced environmental impact [16].

Training sessions and workshops have played a key role in disseminating information and best practices related to banana cultivation and product development. The active participation of community members in these sessions indicates a high level of interest and willingness to embrace new agricultural techniques. This increased awareness is crucial for the long-term sustainability of regenerative practices in the village [17].

The establishment of an entrepreneurial group has been instrumental in facilitating the transition from conventional to regenerative agriculture. This group has served as a support network for farmers, providing them with the necessary tools and resources to implement regenerative practices effectively [18]. The group's role in mentoring and advising has been vital in ensuring the successful adoption of new techniques.

Additionally, the program's focus on integrating technology and science into production and marketing has further strengthened community capacity [19]. By leveraging modern tools and approaches, local entrepreneurs have been able to improve product quality and marketability, leading to better financial outcomes [20].

The enhanced knowledge and skills acquired through the program have positioned the community to continue advancing in regenerative agriculture and entrepreneurial endeavors, setting a solid foundation for future growth [21].

3.3. Successful Institutional Support and Marketing Strategies

The program has successfully established the necessary institutional support and marketing strategies to facilitate the growth of banana-based businesses in Alue Krueng Village. The establishment of written agreements for product marketing has streamlined the process of bringing banana derivative products to market. These agreements have ensured that products meet legal requirements and are marketed effectively [22].

The program's collaboration with the local government and the use of village facilities have provided essential support for the activities. Access to resources such as village halls, printers, and computers has enabled smooth operation and coordination of the program's various components. This support has been crucial in overcoming logistical challenges and ensuring the program's success [23].

Marketing strategies, including brand creation and packaging, have been carefully developed to enhance the visibility and appeal of banana derivative products. These strategies have been complemented by obtaining necessary permits and approvals from industrial and trade departments, facilitating broader market access [24].

The program's focus on monitoring and evaluation has ensured that activities remain aligned with initial goals. Regular assessments have provided valuable insights into the program's effectiveness and areas for improvement [25]. This ongoing evaluation process has been essential for maintaining progress and achieving desired outcomes.

In summary, the successful implementation of institutional support and marketing strategies has significantly contributed to the program's achievements. The establishment of a

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solid foundation for marketing and business operations has enabled the community to effectively capitalize on opportunities in the banana-based industry.

4. Conclusion

The program in Alue Krueng Village has successfully enhanced local entrepreneurial activities and economic impact through effective guidance and support in regenerative banana cultivation. The establishment of entrepreneurial groups, coupled with improved knowledge and capacity building, has led to a significant increase in banana-based products and business ventures. The integration of institutional support and strategic marketing has streamlined product development and market access, demonstrating the program's effectiveness in fostering a thriving, sustainable, and economically vibrant community.

The implications of this study include the potential for larger-scale application in other villages facing similar challenges in entrepreneurship development and sustainable agriculture. The success of this program can serve as a model for local agricultural and economic policies, encouraging the government to provide greater support for resource-based entrepreneurial initiatives. Additionally, the integration of institutional support and strategic marketing can be adopted to enhance market access in various regions, contributing to broader economic growth and sustainable community development.

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References

[1] P. Smith *et al.*, "Which practices co-deliver food security , climate change mitigation and adaptation , and combat land degradation and desertification ?*," *Glob. Chang. Biol.*, vol. 26, no. 3, pp. 1532–1575, 2020, doi: 10.1111/gcb.14878.

[2] R. S. G. S. Singh, "Traditional agriculture : a climate-smart approach for sustainable food production," *Energy, Ecol. Environ.*, vol. 2, no. 5, pp. 296–316, 2017, doi: 10.1007/s40974-017-0074-7.

[3] R. Khangura, D. Ferris, C. Wagg, and J. Bowyer, "Regenerative Agriculture—A Literature Review on the Practices and Mechanisms Used to Improve Soil Health," *Sustain.*, vol. 15, no. 3, pp. 1–41, 2023, doi: 10.3390/su15032338.

[4] P. J. Hill, "Analysis of Regenerative Agriculture Practices on Soil and Energy," 2023.

[5] K. E. Giller, R. Hijbeek, J. A. Andersson, and J. Sumberg, "Regenerative Agriculture : An agronomic perspective," *Outlook Agric.*, vol. 50, no. 1, pp. 13–25, 2021, doi: 10.1177/0030727021998063.

[6] M. Vamshi and R. Jagadeesan, "The Revolutionary Impact of Regenerative Agriculture on Ecosystem Restoration and Land Vitality : A Review," *J. Geogr. Environ. Earth Sci. Int.*, vol. 28, no. 4, pp. 1–14, 2024, doi: 10.9734/JGEESI/2024/v28i4760.

[7] M. Dudek and A. Rosa, "Regenerative Agriculture as a Sustainable System of Food Production: Concepts, Conditions, Perceptions and Initial Implementations in Poland, Czechia and Slovakia," *Sustainability*, vol. 15, no. 22, p. 15721, 2023, doi: 10.3390/su152215721.

[8] L. Ranacher, B. Pollakova, P. Schwarzbauer, S. Liebal, N. Weber, and F. Hesser, "Farmers ' Willingness to Adopt Short Rotation Plantations on Marginal Lands : Qualitative Study About Incentives and Barriers in Slovakia," *BioEnergy Res.*, vol. 14, pp. 357–373, 2021. doi: https://doi.org/10.1007/s12155-020-10240-6

[9] M. M. Kansanga, R. Bezner Kerr, E. Lupafya, L. Dakishoni, and I. Luginaah, "Does participatory farmer-to-farmer training improve the adoption of sustainable land management practices?," *Land use policy*, vol. 108, no. January, p. 105477, 2021, doi: 10.1016/j.landusepol.2021.105477.

[10] T. O'donoghue, B. Minasny, and A. McBratney, "Regenerative Agriculture and Its Potential to Improve Farmscape Function," *Sustain.*, vol. 14, no. 10, 2022, doi: 10.3390/su14105815.

[11] A. G. Davis, D. R. Huggins, and J. P. Reganold, "Linking soil health and ecological resilience to achieve agricultural sustainability," *Front. Ecol. Environ.*, vol. 21, no. 3, pp. 131–139, 2023, doi: 10.1002/fee.2594.

[12] O. Zuber-skerritt, "An educational framework for participatory action learning and action research (PALAR)," *Educ. Action Res.*, vol. 0792, no. May, pp. 1–20, 2018, doi: 10.1080/09650792.2018.1464939.

[13] N. Rangana, D. Geduld, and H. Sathorar, "Multiple stakeholder collaborations to co-develop school improvement plans in Community schools : A Participatory Action Learning and Action Research (PALAR) study," *SAJELM*, vol. 3, no. 1, pp. 5–25.

[14] D. J. Garcia, B. M. Lovett, and F. You, "Considering agricultural wastes and ecosystem services in Food-Energy-Water-Waste Nexus system design," *J. Clean. Prod.*, vol. 228, pp. 941–955, 2019, doi: 10.1016/j.jclepro.2019.04.314.

[15] I. Rado, M. F. Lu, I. C. Lin, and K. Aoo, "Societal entrepreneurship for sustainable asian rural societies: A multi-sectoral social capital approach in thailand, taiwan and japan," *Sustain.*, vol. 13, no. 5, pp. 1–28, 2021, doi: 10.3390/su13052747.

[16] S. Šūmane *et al.*, "Local and farmers' knowledge matters! How integrating informal and formal knowledge enhances sustainable and resilient agriculture," *J. Rural Stud.*, vol. 59, pp. 232–241, 2018, doi: 10.1016/j.jrurstud.2017.01.020.

[17] E. Lestari, A. Wibowo, and P. Rahayu, *Stakeholder Analysis in the Development of a Banana Center in Karanganyar Regency, Central Java, Indonesia*, vol. 1. Atlantis Press International BV, 2023. doi: 10.2991/978-94-6463-128-9_11.

[18] H. Gosnell, N. Gill, and M. Voyer, "Transformational adaptation on the farm: Processes of change and persistence in transitions to 'climate-smart' regenerative agriculture," *Glob. Environ. Chang.*, vol. 59, no. August 2018, p. 101965, 2019, doi:

10.12198/spekta.v5i2.11457

10.1016/j.gloenvcha.2019.101965.

[19] O. Eryanto, R. A. Kuswardani, Z. Noer, and M. R. Aulia, "The Influence of Agricultural Extension Agents on Pest Management and Farmer Capability for Enhance Productivity in Asahan Regency," *Univers. J. Agric. Res.*, vol. 11, no. 18, pp. 849–859, 2023, doi: 10.13189/ujar.2023.110510.

[20] M. R. Aulia, "Digital Competencies and Experience in Partnership Program on SMEs Performance," *J. Res. Soc. Sci. Econ. Manag.*, vol. 02, no. 7, pp. 1416–1425, 2023. doi: https://doi.org/10.59141/jrssem.v2i07.385

[21] T. L. Evans, *Competencies and pedagogies for sustainability education: A roadmap for sustainability studies program development in colleges and universities*, vol. 11, no. 19. 2019. doi: 10.3390/su11195526.

[22] A. M. Y. Trauger and A. Murphy, "On the Moral Equivalence of Global Commodities : Placing the Production and Consumption of Organic Bananas," *Int. J. Sociol. Agric. Food*, vol. 20, no. 2, pp. 197–217, 2012.

[23] M. Cichosz, C. M. Wallenburg, and A. M. Knemeyer, "Digital transformation at logistics service providers: barriers, success factors and leading practices," *Int. J. Logist. Manag.*, vol. 31, no. 2, pp. 209–238, 2020, doi: 10.1108/IJLM-08-2019-0229.

[24] A. Wulandari, D. Marcelino, B. Suryawardani, D. Gusnadi, B. Prabawa, and R. Y. Arumsari, "How to Develop Marketing Strategy, Packaging Designs, and Superior Product Processing Education?," *J. Penyul.*, vol. 20, no. 01, pp. 1–13, 2024, doi: 10.25015/20202448777.

[25] K. C. Bastian, D. Lys, and Y. Pan, "A Framework for Improvement : Analyzing Performance-Assessment Scores for Evidence-Based Teacher Preparation Program Reforms," *J. Teach. Educ.*, pp. 1–15, 2018, doi: 10.1177/0022487118755700.