

ABSTRAK

PENGEMBANGAN MODUL PERTANIAN HIDROPONIK BERBASIS *ON-SITE* PjBL (*PROJECT BASED LEARNING*) UNTUK PENDIDIKAN NONFORMAL

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Pelatihan hidroponik sebagai salah satu bentuk pendidikan nonformal memerlukan bahan ajar yang sistematis, mudah dipahami, dan mampu mendukung pengembangan pengetahuan dan keterampilan peserta. Namun, pelaksanaan pelatihan hidroponik di masyarakat masih sering mengandalkan penyampaian materi secara lisan sehingga peserta mengalami kesulitan dalam memahami dan menerapkan materi secara mandiri. Selain itu, lembaga pelatihan di bidang pertanian membutuhkan bahan ajar yang terstruktur untuk menunjang proses pembelajaran. Penelitian ini bertujuan untuk mengembangkan modul pertanian hidroponik berbasis *on-site Project Based Learning* (PjBL) yang layak, praktis dan efektif digunakan dalam pendidikan nonformal.

Penelitian ini menggunakan metode *Research and Development* (R&D) dengan model 3D (*Define, Design dan Develop*). Tahap pengembangan meliputi analisis kebutuhan melalui wawancara, perancangan dan pengembangan modul, serta uji coba modul. Hasil penelitian menunjukkan bahwa modul yang dikembangkan memiliki tingkat kelayakan dengan indeks *Aiken's V* sebesar 0,78 yang termasuk kategori sedang. Hasil uji kepraktisan memperoleh skor rata-rata 3,30 yang menunjukkan bahwa modul sangat praktis. Sementara itu, keefektifan modul berdasarkan hasil uji coba memperoleh nilai *n-gain* sebesar -0,26 yang termasuk kategori sangat rendah. Berdasarkan hasil keefektifan tersebut, menunjukkan bahwa penggunaan modul belum berjalan efektif di masyarakat.

Kata kunci: modul, hidroponik, *on-site* PjBL, pendidikan nonformal, pelatihan

ABSTRACT

**DEVELOPMENT OF A HYDROPONIC AGRICULTURE MODULE ON-SITE
PROJECT BASED LEARNING (PjBL) FOR NON-FORMAL EDUCATION**

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Hydroponics training, as a form of non-formal education, requires systematic, easy-to-understand teaching materials that support the development of participants' knowledge and skills. However, hydroponics training in the community often relies on oral delivery, making it difficult for participants to understand and apply the material independently. Furthermore, agricultural training institutions require open, structured materials to support the learning process. This research aims to develop a hydroponic farming module based on on-site Project Based Learning (PjBL) that is feasible, practical, and effective for use in non-formal education.

This research employed a Research and Development (R&D) method with a 3D model (Define, Design, and Develop). The development phase included needs analysis through interviews, module design and development, and module trials. The results showed that the developed module had a feasibility level with an Aiken's V index of 0.78, which is categorized as moderate. The practicality test obtained an average score of 3.30, indicating that the module is very practical. Meanwhile, the effectiveness module, based on the trial results, achieved an n-gain value of -0.26, which is considered very low. These effectiveness results indicate that the module's use has not been effective in the community.

Keywords: *module, hydroponics, on-site PjBL, non-formal education, training*