

**KNOWLEDGE THAT TRANSFORMS: BASIC REPAIRS FOR THE
COMMUNITY IN ELECTRICAL, MECHANICAL AND HYDRAULIC WORK***CONHECIMENTO QUE TRANSFORMA: REPAROS BÁSICOS PARA A
COMUNIDADE EM ELÉTRICA, MECÂNICA E HIDRÁULICA**CONOCIMIENTO QUE TRANSFORMA: REPARACIONES BÁSICAS PARA LA
COMUNIDAD EN ELECTRICIDAD, MECÁNICA E HIDRÁULICA**LA CONNAISSANCE QUI TRANSFORME : REPARATIONS DE BASE POUR LA
COMMUNAUTE EN ELECTRICITE, MECANIQUE ET HYDRAULIQUE*

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Abstract: This project aims to promote basic technical training for communities in situations of social vulnerability through instruction in electrical, mechanical and hydraulic repairs. The proposal seeks to develop practical skills that contribute to autonomy, income generation and a better quality of life. The methodology is based on theoretical and practical classes, with a participatory and contextualized approach. The expected result is the education of citizens better prepared to deal with everyday demands, as well as the encouragement of local entrepreneurship.

Keywords: technical training; university extension; basic repairs; social inclusion; sustainability.

Resumo: O presente projeto tem como objetivo promover a capacitação técnica básica de comunidades em situação de vulnerabilidade social, por meio da formação em reparos elétricos, mecânicos e hidráulicos. A proposta visa desenvolver habilidades práticas que contribuam para a autonomia, geração de renda e melhoria da qualidade de vida. A metodologia adotada baseia-se em aulas teóricas e práticas, com abordagem participativa e contextualizada. Espera-se como resultado a formação de cidadãos mais preparados para lidar com demandas cotidianas, além de fomentar o empreendedorismo local.

Palavras-chave: capacitação técnica; extensão universitária; reparos básicos; inclusão social; sustentabilidade.

Resumen: El presente proyecto tiene como objetivo promover la capacitación técnica básica de comunidades en situación de vulnerabilidad social, mediante la formación en reparaciones eléctricas, mecánicas e hidráulicas. La propuesta busca desarrollar habilidades prácticas que contribuyan a la autonomía, a la generación de ingresos y a la mejora de la calidad de vida. La metodología adoptada se basa en clases teóricas y prácticas, con un enfoque participativo y contextualizado. Se espera como resultado la formación de ciudadanos mejor preparados para afrontar las demandas cotidianas, además de fomentar el emprendimiento local.

Palabras clave: capacitación técnica; extensión universitaria; reparaciones básicas; inclusión social; sostenibilidad.

Résumé: Le présent projet a pour objectif de promouvoir la formation technique de base de communautés en situation de vulnérabilité sociale, au moyen d'une formation en réparations électriques, mécaniques et hydrauliques. La proposition vise à développer des compétences pratiques qui contribuent à l'autonomie, à la génération de revenus et à l'amélioration de la qualité de vie. La méthodologie adoptée repose sur des cours théoriques et pratiques, selon une approche participative et contextualisée. Le résultat attendu est la

formation de citoyens mieux préparés à faire face aux besoins du quotidien, ainsi que l'encouragement de l'entrepreneuriat local.

Mots-clés: formation technique ; extension universitaire ; réparations de base ; inclusion sociale ; durabilité.

1 Introduction

University extension plays an essential role in integrating academic knowledge and social demands, contributing to the transformation of local reality (FORPROEX, 2012). In this context, projects aimed at the technical training of communities become important tools for social and economic development.

The lack of basic knowledge in areas such as electrical, mechanical and hydraulic work directly affects the population's quality of life, generating additional costs and dependence on specialized services (SENAI, 2018). Thus, educational initiatives that promote technical autonomy can contribute significantly to productive inclusion.

This project proposes the implementation of practical workshops focused on teaching basic repairs, strengthening the role of the university as an agent of social transformation.

The reality of many communities reveals a lack of basic technical knowledge for maintaining residential installations. Simple problems, such as leaks, short circuits and mechanical failures, often go unresolved for lack of knowledge, creating risks and losses (ABNT, 2020).

In addition, basic professional qualification can act as a gateway to the labor market, especially in contexts of unemployment and informality (IBGE, 2023). The project is therefore justified by the need to promote social inclusion, autonomy and income generation.

The main objective is to train community members in basic knowledge of electrical, mechanical and hydraulic repairs, promoting autonomy and a better quality of life. The specific objectives are as follows:

- To teach fundamental safety concepts for electrical, mechanical and hydraulic installations;
- To develop practical skills in basic maintenance;
- To encourage local entrepreneurship;
- To promote integration between the university and the community;
- To encourage the conscious use of resources and sustainability.

2 Theoretical framework

Short-term technical education has proven effective in promoting employability and social inclusion (FREIRE, 1996). According to the author, learning must be related to the individual's reality, valuing practical and contextualized knowledge.

In the field of professional training, competency-based learning allows the development of skills applicable to everyday life (ZARIFIAN, 2001). In the context of basic repairs, this translates into the ability to identify and solve simple problems safely.

Technical standards such as NBR 5410 (electrical installations) and NBR 5626 (hydraulic installations) reinforce the importance of technical knowledge in ensuring safety and efficiency (ABNT, 2020).

3 Methodology

The project will be carried out through theoretical and practical activities organized into modules:

3.1 Target audience

- Residents of the local community;
- Young people and adults interested in technical training.

3.2 Module structure

3.2.1 Module 1 – Fundamentals of Electrical Work

- Basic concepts (voltage, current, resistance);
- Simple installations;
- Replacing light bulbs, outlets and circuit breakers;
- Electrical safety.

3.2.2 Module 2 – Fundamentals of Plumbing

- Water supply and sewage systems;
- Identifying and repairing leaks;
- Replacing faucets and siphons;
- Rational use of water.

3.2.3 Module 3 – Fundamentals of Mechanics

- Basic tools;
- Simple maintenance of household appliances;
- Adjustments and minor repairs.

3.3 Teaching methodology

- Dialogic lectures;
- Practical workshops;
- Case studies;
- Continuous assessment based on practical performance.

4 Schedule

Table 1 – Schedule

SCHEDULE	MONTH 1	MONTH 2	MONTH 3
PLANNING	X		
OUTREACH	X		
MODULE DELIVERY		X	X
EVALUATION AND FINAL REPORT			X

5 Required resources

- Electrical materials (wires, outlets, circuit breakers);

- Tools (screwdrivers, pliers, multimeter);
- Plumbing materials (pipes, fittings);
- Adequate physical space;
- Personal protective equipment (PPE).

6 Expected results

- Basic technical training of participants;
- Reduction of simple household problems;
- Encouragement of entrepreneurship;
- Strengthening of the university–community relationship;
- Contribution to local social development.

7 Final considerations

The project “Knowledge That Transforms” highlights the importance of university extension as an instrument of social inclusion and transformation. By training individuals in practical skills, it promotes not only autonomy but also opportunities for income generation and a better quality of life.

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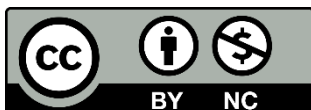
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