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TECHNICAL REPORT

Application Trade Discovery: Job Education Research Methodology, Operational Autodidactic Copilote Distance
[version 1; not peer reviewed]

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Abstract

: Application Trade Discovery: Job Education Research Methodology, Operational Autodidactic Copilote Distance
Overview & Scope
This research explores the convergence of career programming, trade discovery, and autodidactic learning within a modular, signal-driven framework. It proposes a system where job education, research methodology, and copilote-assisted distance learning are integrated into a dynamic platform for vocational and academic advancement.
Key Description
• Domains: Career architecture, curriculum design, signal control, PCB implementation, vocational diagnostics
• Tools: Visual Basic logigrammes, microcontroller loops, PLC command circuits, ATM logic, curriculum dashboards
• Frameworks: AIU career center, CPD Scotland, SAQA, NATED, RNF, SCIE, trade company integration
Data Analysis
Please provide details of the customer discovery training relied upon to meet the

Please provide details of the customer discovery training relied upon to meet the eligibility
conditions, including: a description of the customer discovery training program(s), with
corresponding dates and award number(s) or other program identification details; a description of
the technology in relation to which the customer discovery was undertaken, and a summary of the
customer discovery findings. (Up to 250 words) Title: Application Trade Discovery: Job Education Research
Methodology, Operational Autodidactic Copilote Distance,unified system
for lifelong talent development.
Key Description
• Domains: Vocational training, AIU curriculum, CPD systems, PCB
implementation, microcontroller logic, and trade diagnostics
• Tools: Visual Basic logigrammes, signal registers, PLC command
circuits, ATM logic, and curriculum dashboards
• Frameworks: AIU career center, CPD Scotland, SAQA, NATED, RNF, SCIE,
and trade company integration
Data Analysis
• Sources: Published theses, CVs, experimental portfolios, discovery
logs, and trade inventories
• Signals: Career progression (junior/senior), award validation,
curriculum mapping
• Metrics: Energy output, signal classification (linear/non-linear), grid
stability, skill level tracking
equations, and total cost analysis.
Credential Record Tableaux Line (Extended Format)
Date Institution / Platform Item / Module Sale Price Amendment Final
Cost Award / Certificate Library Usage Booking (Type & Duration) Booking
Price Notes / Integration Points
2025-10-08 Shoprite / CNA / Elektor Elektor Starter Kit R450 -R90 R360
Electronics Fundamentals 3h Sixty60 Delivery (1h) Free GitHub + SAQA/NQF
dashboard
Please check the approporiate box below to indicate whether the proposing Fast-Track team will
be complete at the time of the proposal submission.
Yes
10. Is this Project Pitch for a technology or project concept that was previously submitted as a full
proposal by your company to the NSF SBIR/STTR Phase I Program – and was not awarded ?
No

11. Has your company received a prior NSF SBIR or STTR award?
No
12. Does your company currently have a full Phase I SBIR or STTR proposal under review at
NSF?
No
13. Briefly Describe the Technology Innovation?equations, and total cost analysis.
Credential Record Tableaux Line (Extended Format)
Date Institution / Platform Item / Module Sale Price Amendment Final Cost Award / Certificate Library Usage Booking (Type & Duration) Booking Price Notes / Integration Points
2025-10-08 Shoprite / CNA / Elektor Elektor Starter Kit R450 -R90 R360 Electronics Fundamentals 3h Sixty60 Delivery (1h) Free GitHub + SAQA/NQF dashboard
2025-10-08 GitHub Reward Model Deployment $120 -$40 $80 Contributor Badge 3h CI/CD Run (1h) Free GitHub + AGI Collaboration Record
Historiogram Equations for Behavioral Fusion
• Fusion of User Behavior:

$$F_{ui} = w_o O_{ui} + w_a A_{ui} + w_b B_{ui}$$

Where OuiO_{ui}, AuiA_{ui}, and BuiB_{ui} are order,
following, and browsing counts; weights wo=1w_o = 1, wa=0.5w_a = 0.5, wb=0.5w_b = 0.5
• Cosine Similarity for User Fusion:

$$S_f(u, v) = \cos(\theta) = \frac{F_u \cdot F_v}{\|F_u\| \|F_v\|}$$

• Total Similarity Score:

$$S(u, v) = S_f(u, v) + S_{bid}(u, v) + S_{nb}(u, v) + S_{item}(u, v)$$

• Top-K Recommendation Set:

$$RS_u = \{i_1, i_2, \ldots, i_K\}$$

Where KK
is the mean of historical orders for user uu
Total Cost Analysis Table
Category Sale Price Amendment Final Cost Booking Cost Net Cost
Starter Kit R450 -R90 R360 Free R360
Reward Deployment $120 -$40 $80 Free $80
AGI Collaboration & E-Commerce Integration

AGI in Human-Machine Collaboration

•

Credential Record Tableaux Line Format

Date Institution / Platform Item / Module Sale Price Amendment Final Cost Award / Certificate Reward Points Library Usage Booking (Type & Duration) Booking Price Notes / Integration Points

2025-10-08 CPS Institute CPS Architecture & IoT Lab R1,500 -R400 R1,100 Certificate – CPS Integration 180 pts 4h Sensor Network Workshop (2h) R300 GitHub + SAQA/NQF +

025-10-08 Blockchain Academy DLT Credentialing Module $200 -$60 $140 Certificate – Blockchain in Education 150 pts 3h Smart Contract Lab (1h) Free GitHub + ORCID Registry + SAQA/NQF

2025-10-08 GitHub AGI Fusion Engine Deployment $120 -$40 $80 Contributor Badge 100 pts 3h CI/CD Run (1h) Free GitHub + AGI Collaboration Record

' Module: CPSDLTCredentialDashboard

Option Explicit

Credential Record Tableaux Line Format

Date Institution / Platform Item / Module Sale Price Amendment Final Cost Award / Certificate Reward Points Library Usage 14. Briefly Describe the Technical Objectives and Challenges?Project-29 Overview: Modular Engineering Record Book

Field Description

Project Title Untitled (Project-29)

Created 24 August 2025

Last Modified 24 August 2025

Project Owner Tshingombe

End User Company Tshingombe Engineering

Scope Engineering trade application (theory + practical)

Modules BOM Manager, Activity Log, Documents, Product Configurator

Tools Referenced Visual Basic logigramme, algorigramme, data analysis, cost tracking, award/reward ledger

Modular Components for BOM and Trade Curriculum

Product Segments

• Conveyor, HVAC, Food Depositor, Hoisting, Material Working, Pumping, Packaging

• PLC, PAC, IOs, VSD, Soft Starters, HMI Panels, Relays, Enclosures, Harmony Interfaces

• Motion Control & Robotics, Power Supplies, Software License Configurator

BOM Logic

• Add by reference number or Excel/CSV template

• Segment-based selection tools

• Total cost tracking (currently R0.00 for Project-29)

Total cost tracking (currently R0.00 for Project 29)
Record Book & Transcript Integration
Award & Amendment Ledger
• Projects 1–29 show a cost range from R0.00 to R400,547.09
• Amendments and rewards can be tracked using:
o EcoStruxure Security Expert: Digital Job Book
o Single Record Download Service
o Transcript dashboard (12 hours completed, R0.00 cost)
Visual Basic Logic Modules
• Logigramme: Flowchart logic for BOM, training, and award tracking
• Algorigramme: Algorithmic logic for cost analysis, detection rate, and transcript amendment
Training & Curriculum Mapping
Training Module Status Duration
Wind Energy Fundamentals Active No Due Date
EcoStruxure Security Expert Completed 97 min
Transcript Aggregate Active 12 hrs
• Curriculum aligns with engineering trade theory + practical, security systems, and energy fundamentals
• Use transcript to manage active training and fiscal year reporting (ends 31/12/2025)
Legacy Project Ledger (Projects 1–28)
Project Last Modified Cost
Project-28 17/3/2025 R30,687.22
Project-25 9/3/2025 R400,547.09Project-17 5/3/2025 R385,363.62
Project-12 17/1/2024 R119,344.00
Project-3 12/1/2024 R23,325.59
These entries can be linked to a Visual Basic-powered dashboard for cost evolution, reward tracking, and amendment history.
Would you like help generating a logigramme or algorigramme for Project-29's BOM flow, transcript logic, or award ledger? I can also scaffold a bilingual export module for your record book.
Here's how we can scaffold this into your bilingual, audit-ready framework:
Eaton Integration Summary: Modular Credential & SLA Tracker
Registration & SLA Configuration
Field Value
Platform
Status Registration Pending
Form Submitted 23 Feb 2025
UPS Type BladeUPS
kVA Rating 36
Serial No. 30
Service Plan PREMIUM

Service Plan PREMIUM
Response Level 8/5 and 24/7
Cyber Monitoring Enabled
OPEX Optimization Yes (travel, labour, spare parts included)
This SLA logic can be embedded into a Visual Basic algorigramme for predictive maintenance, cost evolution, and cyber diagnostics.
Training Completion: Eaton University
| Activity Code | ETNFRFSWHR_EL | | Workshoready framework that supports:
Innovation & Discovery Record Book
Overview & Scope Statement
This record book documents:
• Curriculum-linked inventions across electrical, energy, and digital systems
• Patent claims and amendments with low-cost traceability
• Award tracking: Gold, Platinum, and institutional recognition
• System integration with Visual Basic logic, logigrammes, and schematic principles
Management System Information
• Visual Basic dashboards for module tracking
• Logigrammes for workflow mapping (e.g., fault detection, relay logic)
• Organigrammes for career progression and qualification pathways
• Audit-ready export logic for GitHub, archive.org, and institutional repositories
Deliverables & Inventory
Category Deliverable
Innovation Patent claim forms, invention descriptions
Curriculum Text box modules, schematic diagrams
Assessment Experimental scores, performance metrics
Awards Gold/Platinum certificates, cost-benefit analysis
System Logic Visual Basic code, processor frames, relay logic
Publication Research articles, AIU repository entries
Supports patent, award, and curriculum tracking Needs institutional alignment
Cross-platform (GitHub, archive.org, Excel) Initial setup may be resource -intensive
Data Analysis & Research Methods
• Visual Basic logic: ReadControlPort(), ToggleSCADASwitch(), ControlLED(), SwitchOffPin7(), CalculateZ()
• Equations:
o $Z=rg+jxd$Z = rg + jxd
o $Pmax=V24ZP_{max} = \frac{V^2}{4Z}$
o $S=VI=P+jQS = V \cdot I = P + jQ$
o $Energy=it1t2\text{Energy} = i \int_{t_1}^{t_2}$

• Curriculum comparison: Experimental score vs. module value

COMPETING INTERESTS

engineering science technical

KEYWORDS

policy enginering electrical rural system discovery

Comments

0 COMMENTS

ADD YOUR COMMENT