Mini Report: AI Lab Infrastructure & Strategy

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1 Executive Summary

This mini report outlines the formalized scope and direction of AI and digital adoption efforts at Windesheim, coordinated by Christiaan Verhoef. It reflects recent strategic conversations with Michiel Steeman and Harrold van den Nieuwboer, and integrates operational updates such as AI stack deployments, dashboard development, and the launch of a lectorate-wide digitization scan.

1.0.1 Weekly Commitment & Roles

- **1 day/week – VCH (Value Chain Hackers)**
  As *Technisch Facilitator AI & Data*: Maintain and expand local AI stack, support data and tooling infrastructure.
- **2 days/week – Lectoraat-wide**
  As *Digital Adoption Specialist*: Guide colleagues in the effective use of AI and ICT tools to enhance education and research.

1.0.2 Objectives

- Enable scalable, secure, and local-first AI usage
- Provide reproducible tools and templates for staff and students
- Make technology a **lever**, not a **barrier**
- Facilitate—not impose—AI use, aligned with actual needs

1.0.3 Key Initiatives Underway

- **AI Workbook & Infrastructure**: Deployment of tools like OpenWebUI, pgvector, n8n

- **Field Implementation**: Lightweight stack (MSTY) deployed with students
- **BI Dashboard (Ronald)**: Live survey analytics pipeline on GitHub Pages
- **Beergame Revival**: Preparing for re-integration into the minor Process Optimization
- **Digitaliseringsscan**: Lectorate-wide interviews and tool matching to map opportunities & bottlenecks

This effort positions Windesheim to lead in practical AI adoption, grounded in day-to-day educator workflows, and backed by accessible open-source infrastructure.

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2 Identified Problems

- **No clear guidelines**
  Students and researchers use AI tools, but lack responsible instructions or use-cases.
- **Oversold tools and hype**
  Many tools are in a "hype" phase and are not realistically applicable yet.
- **Lack of ownership**
  No single point of coordination across departments for practical AI integration.
- **Fragmented infrastructure**
  Tools, datasets, and environments are scattered or impractical to use (e.g., Azure, CoPilot).

"AI is not good or bad — it depends on what people do with it."

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3 Solutions in Progress

3.1 1. Practical Guidelines

- Creation of an **AI Workbook**, expanding:
  - mlr3book
  - The Big Prompt Library
  - fast.ai course

- Distributed under a **CC BY-NC-SA 4.0 license**

3.2 2. Ownership & Autonomy

- Safe, GDPR-compliant environments for experimentation
- Locally integrated AI stack:
  `OpenWebUI + Supabase + Qdrant + pgvector + n8n`

3.3 3. Shared Infrastructure

- Public repositories:
  - VCH-Infra
  - VCH-Datasharing
- Student usage: prompt testing, data exploration, document analysis

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4 What Works Already

- **Obsidian Integration** with local LLMs for semantic search
- **Workshops held** on prompt engineering and local AI use
- **Use cases** tested: ESG reporting, data pipelines, Jupyter-based model interaction
- **Templates** being developed for reproducible AI projects

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5 Field Notes

5.1 Mira – Local Deployment Case

Mira attempted to run the full AI stack on her machine, but it was limited by hardware:

- **Specs**: 8GB RAM with ~6.7GB already in use
- **Outcome**: Full stack was impractical

5.1.1 Solution: Pivot to MSTY (Minimal Stack Toolkit for You)

- Small local models ran successfully
- Prompt workflows loaded and usable
- Performance stable for experimentation

5.1.2 Takeaway

MSTY proves valuable for underpowered machines and increases accessibility to AI tools across students.

5.2 Beer Game – Curriculum Integration

Spoke with **Harrold van den Nieuwboer** about reviving the Beer Game as part of the *Process Optimization* minor.

- Michiel is aware of the project from earlier implementation
- Harrold raised it again during Ruud Wijlhuizen's farewell
- Goal: **structural integration** in the minor

5.2.1 Repository

blockchain-demonstrator-serious-game

5.2.2 Outcome

- Meeting planned in **2 weeks**
- Christiaan will try to **reactivate and test** the game instance before then

5.2.3 Participants

- Harrold van den Nieuwboer
- Christiaan Verhoef
- Maxime Bouillon
- +3 additional team members

5.3 BI Dashboard – Ronald & Digital Team Study

Over the weekend, work progressed on setting up an **automated dashboard** for Ronald de Boer, supporting the ongoing **survey data workflow** for the Windesheim team.

5.3.1 Goals

- Provide Ronald with an easy-to-update interface for survey insights
- Demonstrate how automation and reporting can **digitally augment team operations**
- Contribute to the **ongoing study** into digital tooling for lecturers and coordinators

5.3.2 Progress

- Deployed prototype dashboard at:
  value-chain-hackers.github.io/Bi-Ronald
- Quarto + GitHub Pages used for live publication
- R-based pipeline with future hooks for Supabase and n8n integration

5.3.3 Relevance

This effort aligns directly with: - The goal of **digitizing lecturer workflows** - Demonstrating **low-cost automation** in practice - Building a practical case for scalable, repeatable tech in the lectorate

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5.4 Formalized Role & Next Steps

Following internal discussions, the following **working agreement** has been established:

5.4.1 1 day/week – Value Chain Hackers

Role: *Technisch Facilitator AI & Data*
Focus: Infrastructure & Enablement
- Maintain and expand the local AI stack
- Make tools like OpenWebUI, pgvector, etc. available
- Enable dashboarding, data access, and GPT integrations
- Assist in AI application development and research methodology adoption

5.4.2 2 days/week – Lectorate-wide Support

Role: *Digital Adoption Specialist*
Focus: Empowering staff with AI & digital tools
- Support colleagues in AI integration and use of ICT tools
- Help with: - Faster interview analysis
- Dashboard/report generation
- Classroom AI applications
- Research support
- Co-creation of lesson content, formats, and examples

5.4.3 Underlying Goal

> "Not to invent things for them, but to facilitate."
> "To help them achieve more with less effort."
> "To ensure that technology becomes a lever, not a barrier."

5.5 Upcoming Initiative: "Digitaliseringsscan"

As the next concrete step, a **digital scan of the lectorate** will be conducted through interviews and observations.

5.5.1 Objectives:

- Visit each team member to assess current workflows
- Identify opportunities for AI and digital tools to assist
- Deliver a practical report including:
  - Key opportunities and barriers
  - Suggested tools mapped to their roles
  - Workshop concepts or ready-to-use quick starts

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6 Preconditions for Success

Item	Status
Mandate & Management Backing	Pending
FTE Focus Time	Defined (0.6)
Documentation Pipeline	In progress
Safe Experiment Environment	Operational
Real Datasets & Use Cases	Emerging
Didactic Integration	Started
Regular Feedback Cycle	To be defined
Stakeholder Alignment	In motion

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7 Closing Thought

"Step by step I take a breath…"

8 Nuttige AI-Usecases voor Onderzoek

Usecase	Beschrijving	Voorbeelden van Tools
Literatuuronderzoek automatiseren	AI-gestuurde zoekmachines en samenvatters helpen sneller relevante papers en bronnen te vinden	Perplexity, Elicit, Semantic Scholar
Interviewvoorbereiding	AI kan audio transcriberen, samenvatten en brainstormen over vragen	MacWhisper, Wispr Flow, Otter.ai
Brainstormen en structureren	Ideeën ordenen, onderzoeksvragen formuleren en logische structuur aanbrengen	ChatGPT, Claude, Notion AI
Schrijven en redigeren	Conceptteksten genereren, herschrijven en verbeteren van zinnen	ChatGPT, Claude, Grammarly
Transcriptie & analyse	Gesproken materiaal automatisch transcriberen en thematisch ordenen	MacWhisper, Whisper.cpp, Descript
Onderzoek organiseren	Automatisch afspraken inplannen, e-mails opstellen en reminders verzenden	Shortwave, Motion, Reclaim AI
Data-analyse & visualisatie	Statistische patronen ontdekken, tabellen genereren, grafieken maken	R (met GPT-4 assist), Python, Flowise
Zoekstrategie optimaliseren	Slimme zoekopdrachten uitvoeren en relevante bronnen clusteren	Perplexity, Research Rabbit
Synthese en rapportage	Samenvatten van onderzoeksresultaten tot beleidsteksten of presentaties	ChatGPT, Quarto, Jasper
Simulaties en voorspellingen	Scenario-analyse en voorspellen van trends op basis van data	GPT-4 + Python, LangChain, Ollama

Bonus: Combineer meerdere tools in één workflow (bijv. transcriptie → analyse → rapport) via n8n of Jupyter Notebooks.

Tool	Website	Gratis te gebruiken	Open source	GitHub Link
Perplexity AI	perplexity.ai	Ja	Nee	–
Elicit	elicit.com	Ja	Nee	–
Semantic Scholar	semanticscholar.org	Ja	Nee	–
Scite.ai	scite.ai	Ja (freemium)	Nee	–
Connected Papers	connectedpapers.com	Ja	Nee	–
Litmaps	litmaps.com	Ja (freemium)	Nee	–

Tool	Website	Gratis te gebruiken	Open source	GitHub Link
Consensus	consensus.app	Ja (freemium)	Nee	–
ASReview	asreview.nl	Ja	Ja	GitHub
SemOpenAlex	semopenalex.org	Ja	Ja	GitHub
YAGO	yago-knowledge.org	Ja	Ja	GitHub
LLAssist	arxiv.org/abs/2407.13993	Ja	Ja	GitHub
LitLLM	arxiv.org/abs/2402.01788	Ja	Ja	GitHub
CRUISE-Screening	arxiv.org/abs/2309.01684	Ja	Ja	GitHub
CiteSeerX	citeseerx.ist.psu.edu	Ja	Ja	GitHub
Qiqqa	qiqqa.com	Ja	Ja	GitHub
GrapAL	arxiv.org/abs/1902.05170	Ja	Ja	GitHub
STORM	wikipedia.org/wiki/STORM_(AI_Tool)	Ja	Ja	GitHub

Voice en Transcriptie:

Tool	Website	Gratis te gebruiken	Open source	GitHub Link	Toelichting
MacWhisper	goodsnooze.gumroad.com/l/macwhisper	Ja (macOS only)	Nee	–	Lokale transcriptietool voor audio-opnames met Whisper-model.
Whisper.cpp	github.com/ggerganov/whisper.cpp	Ja	Ja	GitHub	Lichtgewicht C++-implementatie van Whisper, werkt offline op CPU.
Wispr Flow	wisprflow.ai	Ja (freemium)	Nee	–	Tool om brainstormen via spraak te transcriberen en structureren.
Otter.ai	otter.ai	Ja (freemium)	Nee	–	Online spraak-naar-tekst platform met live transcriptie & samenvattingen.

Tool	Website	Gratis te gebruiken	Open source	GitHub Link	Toelichting
AudioNotes	audionotes.app	Ja (beperkt)	Nee	–	Spraaknotitie-app met automatische samenvattingen via AI.
Voicenotes	voicenotes.space	Ja	Nee	–	Browsergebaseerde app voor korte AI-samenvattingen van spraak.
Supernormal	supernormal.com	Ja (freemium)	Nee	–	Neemt meetings op, transcribeert en maakt automatisch notulen.
Scriberr	GitHub	Ja	Ja	GitHub	Zelf-hostbare AI-transcriptie-app die Whisper-modellen gebruikt.
aTrain	arxiv.org/abs/2310.11967	Ja	Ja	GitHub	Open-source tool voor het transcriberen van interviews met ondersteuning voor meerdere talen.
Live Transcribe	android.com/accessibility/live-transcribe	Ja	Ja	GitHub	Real-time transcriptie-app ontwikkeld door Google voor Android.
Final Round AI	finalroundai.com	Ja	Nee	–	AI-tools om interviews te oefenen, cv's te optimaliseren en feedback te krijgen.
Metaview	metaview.ai	Ja (freemium)	Nee	–	Geautomatiseerde, AI-gegenereerde notities voor recruiters en interviewers.
Riverside.fm	riverside.fm/transcription	Ja	Nee	–	AI-aangedreven transcriptieservice voor audio en video met hoge nauwkeurigheid.