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POLICY BRIEF
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Developing Data Dashboards for Teachers on Digital Personalised Learning Tools

Recommendations for policymakers

- Present teachers with data from DPL tools in a format which aligns with existing education frameworks
- Provide explanatory text which supports pedagogical decision-making
- Co-design dashboards with teachers.
- Prioritise developing robust data storage and protection policies

Providing teachers with education data has the potential to inform instructional decision-making and support learning outcomes.[1] One way to facilitate this is through the provision of data dashboards on digital personalised learning (DPL) tools. These dashboards visualise the learning patterns captured by DPL software with the aim of supporting teaching and learning. The potential impact of dashboards, however, depends on teachers being able to correctly interpret data and take appropriate actions as a result.[2, 3]

This brief for educational technology developers aims to support evidence-based decision-making about designing and testing DPL data dashboards. It summarises findings from research in Kenya, independently evaluating a DPL tool developed by EIDU, featuring two dashboards for early grade teachers. One presents data on individual learning progress; the other on learners' usage levels of the DPL tool. Drawing on transferable learnings from this research, recommendations are offered to support future dashboard design.

Evidence from research in Kenya

The research involved:

Design-based research with teachers

Randomised controlled trials (RCTs)

A/B/n software testing

This brief reports evidence from two A/B/n tests on the EIDU DPL tool in Kenya, each of which tested different dashboard designs for sharing data with teachers.[4, 5]

The dashboard that presented learning progress in a grouped format led to enhanced literacy outcomes

Data on learners' progress was either presented as a list or grouped into three categories: "practised enough", "keep going", and "need more practice". The grouped dashboard design led to significantly higher scores in two literacy assessment areas, although there was no difference for numeracy scores. This suggests that teachers were able to make better-informed decisions by viewing a dashboard which grouped learners into progress levels, rather than in a list format.

The dashboard that provided explanatory text to help teachers make sense of the usage data led to significantly greater usage

Data on learners' usage of the DPL tool was presented with and without 'onboarding' messages for teachers. Monthly usage after the dashboards were implemented was significantly greater in schools in the former group (i.e., with explanatory information). This implied that teachers had changed their practices as a result of viewing both the dashboard data and onboarding messages in a way which increased DPL usage.

Research could not determine whether usage dashboards reduced or exacerbated inequality of DPL use

Although usage increased in schools provided with the usage dashboard and onboarding messages, the results did not provide conclusive evidence of whether this increase was achieved equally across learners.

Recommendations

▸ Present data from DPL tools to teachers in a format which aligns with existing education frameworks

Structuring dashboards in a way which is familiar (i.e., grouping learners in a manner similar to national curriculum rubrics) potentially supports teachers' interpretation of the data and therefore prompts changes to pedagogical practice.

▸ Provide explanatory text which supports pedagogical decision-making

The effectiveness of DPL data dashboards in supporting learning outcomes depends on teachers making changes to their practices based on the data they have viewed. Integrating explanatory text within dashboard design may support this pedagogical process.

▸ Co-design dashboards with teachers

Understanding teachers' interpretation and actioning of data is critical to ensuring dashboards are effective. Co-design methods are one way to leverage the respective expertise of technology developers and teachers to optimise dashboard design.

▸ Prioritise developing robust data storage and protection policies

The data generated by DPL tools can be used effectively to support instructional decision-making and learning outcomes. However, data security strategies are required to manage the level of data collected and stored on servers, ensuring that private and personal information remains protected.

Other briefs in this series

- **#1: Enhancing Foundational Literacy and Numeracy in Kenya Through Digital Personalised Learning** https://docs.edtechhub.org/lib/FI95U3TI
- **#2: Supporting Teachers to Implement Digital Personalised Learning in Kenyan Early Grade Classrooms:** https://docs.edtechhub.org/lib/IPP2AQAC
- **#3: Designing Digital Personalised Learning: Critical questions for software development** https://docs.edtechhub.org/lib/7CTEMKPN

About this document

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Endnotes

1. Ifenthaler, D., Gibson, D., Prasse, D., Shimada, A., & Yamada, M. (2021). Putting learning back into learning analytics: Actions for policy makers, researchers, and practitioners. *Educational Technology Research and Development*, *69*(4), 2131–2150. https://doi.org/10.1007/s11423-020-09909-8

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3. Li, Y., Zhang, M., Su, Y., Bao, H., & Xing, S. (2022). Examining teachers' behavior patterns in and perceptions of using teacher dashboards for facilitating guidance in CSCL. *Educational Technology Research and Development*, *70*(3), 1035–1058. https://doi.org/10.1007/s11423-022-10102-2

4. All evidence on the learning progress dashboard is reported in: Sun, C., Major, L., Daltry, R., Obradovic, L, & Friedberg, A. (under review). Enhancing Literacy and Numeracy Through Teacher Dashboards and Digital Personalised Learning in Kenyan Early Years Education.

5. All evidence on the DPL usage dashboard is reported in: Daltry, R., Hinks, J., Sun, C., Major, L., Otieno, M., & Otieno, K. (2025). Integrating digital personalised learning into early-grade classroom practice: A teacher–researcher design-based research partnership in Kenya. *Education Sciences*, *15*(6), 698. https://doi.org/10.3390/educsci15060698