Title: Indicators of Quality Technology-Enhanced Learning and Teaching (TEL&T)

Key messages/overview
Indicators of quality TEL&T is one of the two new themes proposed by UNESCO (BKK) for introduction in EDUsummIT 2015. The context for TWG7’s work on indicators is to serve the need for fit-for-purpose indicators in the implementation of the Post-2015 Education Agenda, the theme of which is *Towards inclusive and equitable quality lifelong learning for all*, as announced in the Incheon Declaration in May 2015 (WEF, 2015).

Technology-Enhanced Learning (TEL) has become increasingly important for educators and policy makers as new capabilities are needed for life and work in the 21st century. Aligning national goals, educational curriculum -- including use of ICT-- with economic development, was a key element of a policy framework put forward by UNESCO in 2008. Utilizing TEL as a means to meet the demand for 21st century skills will help students develop digital literacy and the capabilities needed to use technology appropriately for communication, collaboration and problem-solving. To ensure students are able to develop these needed skills, we need a set of appropriate indicators to inform us of the status of implementation and achievement in TEL&T at different levels of the education system.

Indicators are the criteria by which we determine the degree of success in achieving goals set for quality TEL&T. Stakeholders at the national or global level as well as individual, classroom, school and subnational (e.g. district and project) levels need indicators for feedback and improvement in relation to TEL&T implementation and student success. As suggested by World Education Forum Technical Advisory Group (2015), these global indicators determine criteria used at national and lower levels for monitoring and evaluation.

What is the issue?
Most of the existing indicators related to TEL&T have focused research on the descriptors of technology infusion within school systems. These include the technology infrastructure available, access to Internet and Internet bandwidth, ratio of students to computers, and teachers’ qualifications. However, these indicators are not measures of the impact of TEL on student performance and learning outcomes that are important for the 21st century. People do not learn simply from being exposed to media or technology. Learning results from interactions and engagement in the learning environment with technology playing a mediating role.

We need indicators that can capture and link the variety of learning interactions to observed learning outcomes to help us improve the design and implementation of TEL&T. In summary, four types of indicators are needed:

- Learning outcomes
- Conditions for learning
- Totality of all learning interactions (i.e. learning process indicators)
- e-Learning/TEL&T use (how technology is used to support the totality of learning interactions)

Why does it matter?
Indicators for quality TEL&T help us to monitor progress and development in most crucial aspects of TEL&T, and guide feedback on the innovation process for continuous
improvement. They help support theory building, policy and practice in promoting change & innovation for quality TEL&T.

As policy development and implementation takes place at multiple, interacting levels in educational systems, a good set of indicators for quality TEL&T should serve to:

1. Focus the purpose of data collection;
2. Guide the definitions and criteria for levels of quality for the indicators;
3. Delineate how the indicators feed forward as well as feedback on the different levels of the system;
4. Ensure that the indicators go to the stakeholders at appropriate levels, not just to policy makers; and
5. Check and improve alignment across levels in the process of TEL&T implementation.

This would ensure regular collection of these indicators, and also improve the utility of the indicators that are contextually relevant. In addition, comparability of indicators across institutions, projects, districts, etc. will facilitate multiple levels and units of comparison, and potentially provide opportunities for better knowledge building and peer learning about TEL&T.

What needs to be done?
We need indicators that can help us to
- Identify what matters most in our planning and implementation of TEL&T
- Monitor progress and development in most crucial aspects of TEL&T, and provide feedback on the innovation process for continuous improvement
- Support theory building, policy and practice in promoting change & innovation for quality TEL&T

What’s next?
For policy makers & funders:
- Identify the indicators that matters, and have mechanism/measures for these to influence policy & decision making

For educators/institutional leaders/practitioners
- Use indicators to provide feedback, ensure alignment across context, processes and outcomes within level, and give feedback on alignment across levels

For researchers
- Develop & validate measures that can be reliable and easily implementable
- Establish & curate repository of measures for indicators

References and further reading


Contact information