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A Briefing by Education International

International Summit of the Teaching Profession 2024: Reimagining Education, Realising Potential

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Introduction

by David Edwards,
General Secretary of Education International

On behalf of Education International I congratulate the Singaporean Government for agreeing to host our fourteenth annual *International Summit on the Teaching Profession*. Thank you to Mr. Chan Chun Sing, Singapore's Minister for Education. In thanking our hosts, I would also particularly like to thank the Singapore Teachers' Union and their General Secretary Mike Thiruman, EI's member organisation in Singapore, which has effectively helped put together a superb Summit programme. Thanks to our permanent partner in the Summits, the OECD and Andreas Schleicher, your faith in the Summits is what makes them continuously impactful.

Last year in Washington, DC, I said that our summits "have shown the power of partnership between teacher organizations and governments to advance education policies that meet the needs of all students in a turbulent world."

Our key focus there was on the changing role of teachers, not only to provide them with the support and resources they need and improve their working conditions, but also to equip them with the skills and knowledge to handle emerging challenges such as digitalization and the climate crisis. We placed a strong emphasis on matching quality with equity and inclusion; vital elements for promoting global citizenship.

This year we explore how to transform education to ensure it realises its potential to contribute to a more just, peaceful and sustainable society. We'll discuss the role of technology for the future of learning and teaching in TVET, and consider the types of partnerships necessary to support learning for life.

Recent joint policy papers from EI and the OECD on the post-Covid recovery of education systems, teacher and student wellbeing, and the just and effective use of artificial intelligence in the classroom, provide important background to these discussions. All of them highlight that a human-centred approach is central when reimagining education, and together they constitute a solid basis for future joint policy work between unions and governments.

Indeed, the foundation of the ISTP is our deliberate shared intention these past 14 years to foster and develop collaboration between ministers and union leaders in the pursuit of impactful policy change.

I am reminded that the logo for the 14th ISTP draws inspiration from trees, since just as trees are fundamental to our ecosystem, the teaching profession plays a pivotal role in societies. For EI, trade unions and social dialogue are the roots, functioning not only as a stable base, but the means through which a network of communication occurs which maintains a healthy ecosystem.

Now, the critical work that we have been engaged in through the ISTP – the work of systemic change through collaboration – has been accelerated in unprecedented fashion by the United Nations.

The UN High-Level Panel on the Teaching Profession, appointed by Secretary General António Guterres, just weeks ago released ground-breaking and unanimous recommendations.

Convened in response to the alarming global teacher shortage, the Panel developed 59 recommendations to ensure teachers are valued and respected. The broad and progressive recommendations are the result of sustained union advocacy and a unique opportunity to effect real change for millions of teachers and students around the world.

The Panel's work calls for urgent transformation not only in the work of teachers, but in society's valuation of the profession, and the national importance of education systems.

You will note that, for each session, the relevant recommendations from the Panel are provided for delegations to discuss at the ISTP. Delegations are invited to discuss the significance of the recommendations and what it will take to implement them in their national context.

If we are serious about quality education, about students embracing and engaged in democracy, about transforming the teaching profession, then the systems in place must be fit for purpose.

There is inequality – because of the system. There are unacceptably high workloads, low pay and the departure of too many of my colleagues from the profession – because of the system.

When we transform systems, we can transform teaching conditions, working conditions, students' learning conditions.

Critically, the Panel asserts that the principal means for developing policies on education, teaching, and the teaching profession should be based on a framework of collaboration.

No more precise description could be applied to the work of the ISTP these past 13 years and I welcome you all to the 14th.

David Edwards
General Secretary
Education International

Session 1: Future of Learning and Implications for Teaching

Teachers represent the greatest collective resource of experience, knowledge, and skills in all educations systems. Recognising this simple truth is paramount if collaborative discussions between governments, teacher organisations, policy makers and school systems are to be successful in equipping teachers to support the attainment of future-ready student competencies, through policies, processes, and teacher professional development.

Preparing students for their own future, and by implication that of the communities in which they live, has ever been a mission of school systems. Previous ISTPs have explored what this might mean in terms of the exponential pace of change and the emergence of digital and AI platforms, with the specificities of what "future-ready" implies changing throughout these discussions.

In 2018, for example, the ISTP discussed how to support teachers to facilitate future-ready competencies. Delegations proposed policy solutions such as creating bottom-up, teacher-led pilot and innovation networks that can open education systems to new approaches and design new learning environments, including those outside the school walls. It was recognised that developing a collaborative culture among teachers and school leaders across disciplines would mean they would be more able to develop the kind of interdisciplinary pedagogy that 21st century competencies require (Asia Society, 2018). The advancement of these policy proposals remains in progress.

At the ISTP 2023, delegations again discussed the reimagining of education to develop globally and culturally competent students equipped with critical thinking and creativity; a willingness and ability to engage with different ways of thinking and diverse cultures; well-honed communication skills; and proficiency in multiple languages. Such competencies, it was attested, would enable students to collaborate to address complex global challenges and opportunities, appreciate our multicultural world, find fulfilling jobs, and promote peace and democracy. However, there was also a serious conversation about the systemic barriers to having the time and supports for making that a reality during times of increased bureaucratization and intensification of workload.

Whilst the future competencies discussed at ISTPs are broad-ranging and go beyond the skills needed for the digital revolution, the rise of artificial intelligence (AI) and its impact on education, society, and the world of work looms high over these discussions.

Significantly, EI and the OECD have developed joint guidelines for the effective use of AI in education (OECD and EI, 2023). The guidelines (See Appendix) highlight the importance of securing an ethical approach to innovation, securing teacher involvement with designing and innovating digital learning, drawing on teachers' own micro innovations, and maintaining human-centred learning. These guidelines can be used as a tool by governments and education unions when jointly developing policies on AI in education.

The notion of future-ready competencies has not only been a topic of discussion at the ISTP, but at the 2022 UN Transforming Education Summit. An EI analysis of 131 National Statements of Commitment submitted by the participating governments found that 66 governments made commitments regarding curriculum reform. The majority of those governments committed to transforming curriculum for better alignment with the current and future socioeconomic needs of the country, ensuring employability, developing digital literacy and promoting global citizenship.

Additional commitments to implementing an interdisciplinary, gender-transformative, and trauma informed approach in teaching and learning, fostering intercultural skills and competencies, and introducing violence prevention curriculum all serve as an important context for ISTP 2024 (EI, 2023).

Teachers are the backbones of all good education systems. To fulfil their essential role in the education systems of the future, they must "*promote learning based on experience, enquiry, and curiosity; develop the capacity, the joy and the discipline for problem solving*" (Vision Statement of the United Nations Secretary General on Transforming Education, 2022; p.5).

EI has argued strongly that future competencies require a shift away from authoritative approaches to teaching and education towards preparing teachers for a more facilitative and guiding role in enhancing the critical and creative potential of students. Such transformations would also involve a movement away from an overemphasis on standardized examination driven approaches, which undermine teacher innovation and narrow the education process. Inflexible, over-detailed and imposed curriculum and assessment arrangements are far less likely to be relevant to schools than flexible curricula

which enable and give space to schools to develop and innovate (EI/OECD, 2021).

Future competencies require a curriculum that is culturally relevant to the students it serves. Schools need to be well resourced to provide all the support that is necessary for teachers to effectively meet the needs of diverse classrooms.

Curricula must be responsive to the needs and reflective of the realities of students. This also requires policy reform in terms of the delivery of curriculum in mother tongue languages, and in the ways which schools engage with local communities (discussed further in session 3). It requires nurturing the social and emotional intelligence of young people, not just their academic intelligence, in all grades, subjects, and sectors. Educating the whole child improves student wellbeing and outcomes, as the ISTP 2021 discussed. It requires gender-transformative approaches, trauma-informed pedagogies and engaging with local or Indigenous knowledge.

As has been discussed at previous ISTPs, school curricula should be capable of responding to new realities such as climate change to instil in students the belief that they have the power to initiate positive change and the knowledge and motivation to act. However, 47% of 100 national curriculum frameworks reviewed by UNESCO included no climate change content (UNESCO, 2021, p.4). An EI and UNESCO survey (EI/UNESCO, 2021) found that out of 58000 teachers sampled globally, 80% wanted to continue to learn about Climate Change Education and 90% felt that it was important to teach it. However, 1 in 4 teachers did not feel prepared for this task. There is therefore an opportunity for delegations at the Summit to set out new approaches to strengthen curricula and teacher training on existential issues such as climate change.

As the climate youth movement has demonstrated, future-ready competencies also include critical thinking, a concern for social justice, and civic engagement. EI and the OECD have reflected deeply about the importance of teaching global competencies and democratic values. Education plays an important role in tackling prejudices and systemic barriers that are embedded in social norms, which prevent certain groups from entering the profession and/ or accessing education. In addition to changing mindsets, adapting infrastructure and modifying the physical environment also plays a vital role in ensuring inclusion and diversity in both the teaching workforce and the student body.

According to the recently revised *1974 Recommendation concerning Education for International Understanding, Cooperation and Peace and Education relating to Human Rights and Fundamental Freedoms* (2023), key competencies for transformed education include: analytical and critical thinking, anticipatory skills, respect for diversity, self-awareness, a sense of connectedness and belonging to a common and diverse humanity and planet earth, empowerment, agency and resilience, decision-making skills, collaborative skills, adaptive and creative skills, citizenship skills, peaceful conflict resolution and transformation skills, and media and information literacy, communication and digital skills. Governments should encourage and facilitate opportunities for continuous professional development to equip teachers with the skills, knowledge and values to foster student's development of these competencies.

For any of these future-ready competencies to be effectively implemented, two conditions are necessary:

First, teacher professional autonomy must be safeguarded and protected where

it exists, and where it is not evident it must be instated and promoted . This is particularly important given a recent wave of curricular restrictions, and the ongoing politicisation of curriculum around topics that are cornerstones to the actualisation of multicultural democracies, such as human rights, gender identity and expression, imperialism, and racism.

Limited professional autonomy has a detrimental impact on teacher wellbeing, a critical prerequisite for student wellbeing and achievement (EI, 2021; Hargreaves & Shirley, 2022). Research suggests that teachers' job satisfaction is associated with the degree of autonomy teachers feel, which constitutes a fundamental psychological need that contributes to dignity and wellbeing (Collie et al., 2012). The EI/OECD Principles for Effective and Equitable Educational Recovery propose that teachers should be empowered to adapt the curriculum to their learners' needs and situation. However, a recent survey of teacher unions in OECD member countries found that only 27% of unions reported being involved in the initiation of curricula reform (MacBeath et al., 2020).

Second, the environments, pedagogies, and systems behind teacher learning should mirror that for student learning. What is good for student learning and wellbeing, is also good for teacher learning and wellbeing (EI, 2021).

New and different forms of training and professional development are required for teachers to foster these future-ready competencies. Such training and professional development is also needed to respond to diversified classrooms and changing student needs, as well as to prepare students to navigate uncertain futures.

Professional development should also prioritize strategies for supporting the mental health and psychosocial wellbeing of students. Without proper teacher training and support, or if implemented in a non-consistent or non-collective way, taking a whole child approach could become as unsuccessful as any other badly implemented strategy (Hargreaves and Shirley, 2022). Transformations to teacher development need to begin with initial training and should be followed by a meaningful induction period and supported by access to mentoring. Opportunities for professional development should be provided continuously to support relevant, effective and quality practice, which translates into respectability in the classroom and beyond.

Collaborative practice should be promoted, including by providing training to school heads and administrators to support and encourage collaborative workplaces, which will reinforce efforts to foster humanity and dignity for teachers. Training and development need to be complemented with fair evaluation strategies and adequate teacher autonomy and agency so that teachers can act as agents of change to effectively respond to education challenges. As part of this, teachers should have input into decision-making at both the school and policy levels, including through their unions.

Schools can achieve these aims by prioritising the joy of teaching and love of learning in educational reform, policy, and practice.

Policy implications

- Is there an opportunity for teacher unions and governments to develop a joint vision on the curricular reforms needed to ensure students acquire the competencies needed for the future, including digital, green and global skills?

- How can teacher unions and governments work together to ensure that professional development and training opportunities available to teachers meets their needs to effectively and confidently teach future competencies, and that teachers are able to collaborate to enhance and update their pedagogical practice?

Relevant HLP Recommendations:

The recommendations of the UN High-Level Panel on the Teaching profession provide a comprehensive roadmap to transform the teaching profession. Listed below are the recommendations that are most relevant to the discussions of this ISTP session. Together at ISTP, governments and unions have an opportunity to discuss how to ensure that these crucial and timely recommendations are implemented.

3. *Education goals should aim to promote varied and well-supported learning pathways for success in life. Learning should be based on principles of cooperation and solidarity, not exclusion and individualistic competition, and should foster relationships, empathy, compassion, ethics and environmental and social consciousness, no matter which learning pathway is undertaken. Teachers should be able to support multiple pathways to life success, and should not be rigidly bound to assessments and*

pedagogies that fulfil narrow criteria for learning success.

15. *Teacher status and dignity are also directly related to teachers' ability to influence policies regarding their work, including curricula and pedagogical practices. Policies should ensure teacher agency and autonomy based on knowledge, competence and responsibility within education goals, and should foster a climate of trust and respect between school authorities, communities, learners and teachers. Governments should also ensure that teachers and their organizations can engage in social dialogue, including collective bargaining, and policy dialogue on all matters affecting the profession.*

23. *Initial teacher training and CPD need to be transformed to prepare teachers to be leaders in a new learning environment and in new roles. Teachers should be prepared to be not only providers of information but also active and innovative guides and leaders of their students' learning and social development process, in order to support the development of higher-order thinking skills, problem-solving and the ability to learn independently and cooperatively.*

27. *Policies should promote teaching as a collaborative profession, with adequate space, time and resources for collaborative planning, communities of practice, and reflective and reflexive practice by and among teachers, within and beyond their education institution. Such efforts can be supported by education authorities. Teachers should be encouraged to use interdisciplinary teams to teach core curricula content through thematic units.*

33. *Teachers should be trained to prepare learners to be active and responsible global citizens in their own communities, in their countries and in the world in order to advance human rights. Teachers should guide learners in their understanding of social justice, respect for diversity and global solidarity. In this way, teachers can sow the seeds of a culture of peace.*

Session 2: Role of Technology in Transforming Education and Vocational Training

The centrality of the teacher-student relationship in successful learning within our schools and the positive nurturing and development of the next generation was laid clear by the global experience of the Covid 19 pandemic. The importance of technology as an educational tool and platform was also highlighted, by that experience but it is clear that those who regarded technology as potentially a (cheaper) panacea to the challenges faced by education systems were misguided. Technology can enhance quality education when it is integrated as a support to teachers within a well-funded education system.

The second session is an opportunity for participants to further debate the immense potential for technology to improve student learning in general education and Technical and Vocational Education and Training (TVET), whilst guarding against potentially damaging approaches. It aims to unpack the ways schools, TVET institutions, and teachers leverage technology to enhance collaborative learning, create customised learning and assessment experiences, and promote student agency to facilitate and enrich student learning.

Additionally, at this Summit there will be a specific focus on the standards and guidelines that governments, teacher organisations, schools, and TVET institutions can establish to ensure and support effective use of technology in teaching and learning, including standards and guidelines for teacher professional development, and

partnerships with industries. In this regard the Joint AI Guidelines produced by OECD and EI, shared in draft form at ISTP 2023 and then subsequently developed and published within the OECD Digital Outlook volume (see Appendix), are a robust framework for discussions and negotiations at system level (OECD, 2023a).

The role of technology in transforming education has been deeply debated at previous ISTPs.

The ISTP 2022, for example, discussed the Pedagogical Potential of Digital Technologies in Education. EI's 2022 ISTP Briefing argued that digital innovation in education must be at the service of human society with its success measured by how much it contributes to equity, human-wellbeing, creativity, democratic values and sustainable development. EI reaffirms its assessment that teachers must play a role in setting the terms for the use of technology in education and its development must be human-centred and reflect human values. The structures governing education systems must have within them representatives of the users of digital technologies, including teachers and education support personnel and their unions, parents and those involved in education more widely so that they can define the role of AI in pedagogy and in the functioning of schools (EI, 2022).

In 2023, all ISTP participants agreed that the rise of new digital technologies carries real risks—but also incredible potential.

Human relationships are paramount for education. Productively using technology will require intentional collaboration among teachers, students, governments, and technology companies. It will mean trusting and empowering teachers and students to use technology well, while also establishing global standards for responsible use and holding stakeholders accountable for putting students' well-being first. Digital literacy is paramount for sustaining democracy and the promotion of global citizenship, which is an important consideration when reflecting on the first session of this year's ISTP.

EI affirms that a human-centred approach is fundamental for the effective use of technology in education and vocational training. This principle is emphasized by the UN High Level Panel on the Teaching Profession (ILO/UNESCO, 2024), who stress that "*the digital revolution and artificial intelligence must be pedagogically harnessed by teachers and integrated through active and human-centred teaching and learning methods and practice*" (Recommendation 43).

Crucially, the teacher/student relationship must be safeguarded: "*At no point should technology replace the human relationship with the teacher*", the Panel asserts (Recommendation 46). This is not a rhetorical assertion.

New research outlining the current role of AI in education found that most student focused AI technology is designed to replace teachers and remove the relational and human-centred approach to education. Currently, AI in education overly emphasises the transactional via individual learning paths potentially undermining the crucial role of education in community building and social skills development. The use of AI in education focuses on standardised testing and measurable outcomes overlooks individual student needs and stifles teacher

creativity (Holmes, 2023). This ISTP should discuss further how the OECD – EI Guiding Principles can be implemented to ensure that education remains a relational activity.

Discussions around technology at previous ISTPs have not yet been dedicated specifically to the TVET sector, an exciting opportunity for this year's ISTP participants.

Technology is traditionally a priority in TVET. However, COVID-19 may have posed even greater challenges to TVET than to other types of formal learning because its applied nature is, in many contexts, difficult to emulate with the technology available (UNESCO, 2023).

Policymakers often posit TVET as solely a conduit to the labour market, nothing more, but viewing TVET through its economic means only disregards a human-centred approach. Instead, EI supports Moodie et al.'s (2019) alternative proposal of framing technical and TVET and training through the human capabilities approach, arguing that TVET's "*role in developing human capability is to develop each student as a person, as a citizen, and as a worker. By developing each student as a person, we refer to TVET's role developing students' capacity to understand and manage themselves, to understand and manage their environment, and to appreciate and contribute to human culture. By 'developing each student as a citizen', we refer to TVET's role in developing students' capacity to contribute to their community and to participate in the governance of their society. By developing each student as a worker, we refer to TVET's role in developing students' capacity to be and do in work what they have reason to value.*" (p. 7).

The multi-faceted role of TVET is also recognized in the revised 1974 Recommendation (UNESCO, 2023), which argues that TVET systems should be

strengthened for the benefit of "*individuals, economies and societies" and to "promote social and inter-generational solidarity as well as equitable distribution of income and wealth*" (Recommendation 59, p.16)

Despite this importance, TVET struggles to receive serious commitments from governments. For example, an EI analysis of 131 National Statements of Commitment submitted by the participating countries from the 2022 Transforming Education Summit found that only around a third of countries committed to investing in TVET, as well as upgrading, modernising and expanding the sector. Only a few countries committed to providing suitable and quality education, pedagogical training and capacity building for TVET teachers. For the potential of TVET to be realised, a highly qualified and highly trained workforce is integral to ensure equity and quality in the sector.

As a result, the sector faces many challenges. Many OECD countries have significant TVET teacher shortages, partially due to the limited attractiveness of the profession. The supply of TVET teachers could be increased by making a career in TVET teaching more attractive and by employing industry professionals as TVET teachers (OECD, 2023b; 2021).

Education International's global survey of education unions found that teachers in TVET experience some of the greatest disparities in salaries and living standards (Stromquist, 2018). In 2021, the survey showed that job precarity remained particularly acute for TVET teachers (Thompson, 2021). Research indicates that lower salaries often contribute to higher levels of staff turnover, which is a major issue given that stability plays an important role in shaping learning outcomes. Competitive salaries can improve teacher motivation and retention, increase the status of the profession and improve overall wellbeing (OECD, 2022).

Many of these challenges stem from the fact that TVET has been subject to high levels of policy borrowing, which have resulted in a lack of investment in TVET institutions and teachers; the privatisation and fragmentation of TVET provision; and cost shifting to students who can least afford it (Wheelehan and Moodie, 2016).

In many contexts, women also continue to be underrepresented as TVET teachers due to harmful gender stereotypes and norms (UNESCO, 2020). According to the OECD, "*in most countries for which data are available, the actual salaries of 25-64 year-old female upper secondary VET teachers are much lower than those of male teachers and female VET teachers are also more likely to work part time than their male peers*" (2023). As the UN High-Level Panel for the Teaching Profession asserts (2024), targeted programmes should be designed to improve gender balance in the teaching profession, including by attracting more women into TVET and leadership positions (Recommendations 4 and 10). Gender pay equity should be ensured, and there should be commensurate fairness between salaries at different levels of education, including TVET (Recommendation 36). Teacher policies and accompanying implementation plans need to be properly costed using an equity based and gender-sensitive perspective.

A gender imbalance in TVET profession is also reflected in the student population. Of the 146 countries with data, 40 have a sizeable gender gap in favour of males (more than 3 percentage points) in contrast to just 3 in favour of females (UNESCO, 2023).

Despite this, strongly publicly funded TVET can play an important role in improving equity outcomes and "*can contribute to social inclusion, and sustainable, fair and socially just economic prosperity. Publicly funded TVET institutions are the key anchor*

institutions in their communities and local industries. TVET teachers and institutional leaders are deeply involved with their communities, understand their needs, and how to support them" (Wheelahan & Moodie, 2016). TVET can help generate tolerance, increase the development of an inclusive society and acceptance of change, and is important for the prevention of early school leaving.

When considering the relationship between technology and TVET, this equity dimension is critical for ISTP participants to discuss as research indicates that technology in education heightens a digital divide and can worsen equity outcomes.

As has been discussed in previous ISTPs, the COVID-19 pandemic demonstrated the disparities and consequences in access to technology for teaching and learning. The introduction of new technologies can, however, also exacerbate inequities beyond the digital divide, with systemic inequities and discriminatory practices being reflected in digital tools and spaces. Equity strategies must provide teacher training in the pedagogical uses of technology, including in ways that consider the social impacts of technology, and the dimensions of equity and inclusion. This includes supporting learners to develop relational and socio-emotional skills that may be neglected with the deployment of technology.

Effective policies and guidelines should be centred on 3 key principles:

First, teachers and their organisations must be meaningfully consulted on how technology is used in TVET. Teachers seldom take part in decisions on technology: 45% of teachers from 94 countries participating in EI's Teaching with Tech study reported that their unions had not been consulted at all regarding the introduction of new digital technologies, while 29% had been consulted on 'only a few aspects'. At the same time, 57% of respondents indicated that their unions had not been consulted on the digital technology they wanted.

This is particularly important for the unfolding role of AI in education. "Teachers and teacher trade unionists play a crucial role in ensuring that teaching about AI supports human rights and social justice, empowers teachers, and supports student agency – which can only be achieved by involving all stakeholders, especially teachers, but also students, parents, and other community members" (Holmes, 2023).

Engagement is needed regarding teacher training to understand training needs, as currently many teachers feel unprepared, especially TVET teachers. According to the Global Education Monitoring Report, "as part of the European Commission's SELFIE tool, less than half of TVET teachers reported that head teachers had discussed with them their professional development needs for teaching with digital technologies" (EI/UNESCO, 2023). Consultation with multiple actors is necessary for solutions to be pedagogically appropriate.

Secondly, teacher training regarding technology and the products used must be continuously evaluated, sustainable, and responsive particularly for TVET educators. Any potential that technology has will not be realized unless teachers are prepared to use it. Ongoing, school-based teacher professional development is critical to build their skills and confidence in using digital technologies. Ideally, such programmes should provide hands-on experience and opportunities for teachers to share experiences and best practices with peers. Analysis of countries' policies, plans, strategies and

laws on teacher education, as reflected in the Profiles Enhancing Education Reviews (PEER) profiles, shows that key areas are sometimes overlooked: for example, only 21% of countries mention online safety as part of training in these documents. Training must be sustainable, a difficult task given that education technology products change every 36 months, on average.

Lastly, technological advances in TVET require the adoption of new policies and approaches to governance with an ethics by design approach. Ethics by design involves several key principles; transparency and explainability; privacy and data protection; addressing societal biases in technology and promoting fairness; and fostering human agency and accountability (Holmes, 2023). Currently, regulations are rare with only 16% of countries guaranteeing data privacy in education (EI/UNESCO, 2023). Moreover, although countries are developing digital skills standards for curricula and assessment, in some countries these have been defined by private, commercial actors, often the same actors selling the products.

Policy implications

- Is there an opportunity for governments and teacher unions to make a mutual commitment to ensuring that the use of technology in education and TVET is underpinned by a human-centred approach, so that its use is always in the service of enhancing the teacher-student relationship?

- Can teacher unions and governments endorse the EI/OECD guidelines on AI in education and jointly commit to the ethical use of Ai in education, ensuring the profession's involvement in determining how AI is used in education and vocational training?

Relevant HLP Recommendations:

The recommendations of the UN High-Level Panel on the Teaching profession provide a comprehensive roadmap to transform the teaching profession. Listed below are the recommendations that are most relevant to the discussions of this ISTP session. Together at ISTP, governments and unions have an opportunity to discuss how to ensure that these crucial and timely recommendations are implemented.

36. *Teachers should receive salaries and benefits at the same level as compared to other professions with similar educational requirements. Gender pay equity should be ensured, and there should be commensurate fairness between salaries at different levels of education, including early childhood education and TVET.*

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43. *Technology is a transformative force in education. The digital revolution and artificial intelligence must be pedagogically harnessed by teachers and integrated through active and human-centred teaching and learning methods and practices. Such tools should not become a substitute for teachers, but rather should empower teachers to guide their learners' quest for inquisitive, critical, creative and lifelong learning.*

44. *Teachers need autonomy and pedagogical choice in how they use technology to ensure that a given technology improves learning. Where technology is used, teacher and student data and privacy protections should be safeguarded.*

45. *Teacher training and practice should ensure that teachers and learners can be both creators and autonomous users of technology, not just passive consumers.*

46. *Governments should develop policies through social dialogue around the use of education technology. Such policies should ensure sustainable and equitable procurement and deployment of technology; autonomy with respect to content; and the involvement of the teaching profession and student organizations in the design, piloting and evaluation of artificial intelligence tools considered for use in education. The development of such tools should be informed by pedagogical practice, curricula and context considerations, and should respond to the needs of teachers and learners. At no point should technology replace the human relationship with the teacher.*

48. *Coordinated and institutionalized social dialogue between governments (at the appropriate level), representative teachers' organizations and relevant employers' organizations should be the principal means for developing policies on education, teaching and the teaching profession. In addition to issues related directly to employment and working conditions, social dialogue should also cover wider education policy issues, in particular in relation to technology and the transformation of education, just transitions and teaching for entry into the world of work. Collective bargaining should be used to determine conditions affecting teachers.*

Session 3: Partnerships to Support Learning for Life

Community is at the heart of any successful school system and education is a bedrock to a flourishing community. Partnerships enhance and strengthen effective teaching and learning.

The final session will identify how schools can foster such partnerships with stakeholders (including parents, communities, institutes of higher learning and industries) to enrich student learning and strengthen support for lifelong learning. None of this can occur without governments, teacher organisations and schools working collaboratively to equip teachers with the knowledge and skills and provide resources to effectively engage and build sustained partnerships that support student learning.

A lever to ensuring future-ready competencies is a learning experience which encompasses learning beyond the walls of the classroom and schools. Such an approach enables students to discover and deepen their interests, passions, values and beliefs about themselves and others, while strengthening schools' relevance to the local community.

A 'whole-of-society' approach to education and learning can enable education systems to be agents of change in building a world based on social justice and sustainability. As the EI/UNESCO Global Framework of Professional Teaching Standards maintain, "*teaching is inherently constituted in relationships. As well as engaging with students, professional relationships with colleagues, parents, caregivers,* *and education authorities are crucial to effective teaching. Relations with the general community are also crucial to a teacher's work and to the profession as a whole.*" Central to these relationships is the notion that schools are the hubs of their communities.

Schools at the centre of the communities was debated previously at the ISTP 2018. The session rightly pointed out that engaging with education partners brings additional questions around tackling poverty and inequity in communities, to ensure partners, particularly families, have equal access.

"*At their best, schools are the optimistic heart of their communities. In such schools, whatever is happening in the wider world, and whatever their anxieties about the future, children spend their school days in communities-within-communities which unfailingly seek to celebrate the positive*" (Asia Society, 2018).

At the ISTP in 2021, intentional collaboration was discussed as a mechanism to solve complex problems in society. Discussions centred on the importance of the many forms of collaboration including collaboration among teachers within schools; collaboration across schools; collaboration across unions and government; collaboration between education systems and other agencies like health and labour; and collaboration between government systems and broader societies (NCEE, 2021).

In 2022, ISTP delegations described the need for bridging schools, communities, and other agencies to transform schools into learning hubs where all students' learning and development needs are supported holistically, as critical to building more inclusive societies. At the same time, they rightly identified that teachers and schools are taking on more roles in society as quality public services are undermined by privatisation and austerity. Evidence from TALIS and jurisdictions' own surveys shows that teachers often feel overworked or stressed at the prospect of taking on new roles (OECD, 2020). It is imperative that when adapting this approach, teachers are given adequate resources, time and training to do so.

The issue of excessive workload is worthy of specific emphasis. Globally we are facing a crisis in terms of teacher recruitment and retention which threatens to undermine the very effectiveness of education systems. It is clear that excessive workloads leading to poor work life balance and a lack of well-being are a critical factor in the recruitment and retention of teachers. Unless this is addressed, alongside aspects which diminish the status of the profession, such as the need for competitive salaries and professional respect, then many laudable ambitions discussed here at ISTP will founder rather than flourish (ESN, 2023).

When considering partnerships, equity and social justice must be foundational to policymaking, as not every school serves the same socioeconomic community. Strengthening intersectoral partnerships and relationships between families and local communities can allow for multifocal interventions and ensure all children enjoy meaningful ways of participating in the education system. Research indicates engaging local communities in education systems improves equity outcomes and student and teacher wellbeing (EI/OECD, 2022).

At the Transforming Education Summit, several countries committed to valuing Indigenous knowledge and setting education contextually, thereby increasing all students' knowledge about Indigenous histories, cultures and perspectives, and providing culturally relevant and meaningful education to not only Indigenous children, but all children. Central to this commitment is the meaningful participation of the Indigenous communities in the development of curriculum and decision-making processes in education. Currently, in many contexts the teaching workforce is not representative of the students they serve, which can weaken student wellbeing and outcomes. Ensuring that the teaching workforce is representative of student populations is a challenge; but doing so is beneficial in terms of providing role models for students, bridging the gap between families and communities and schools, and introducing new perspectives into classrooms. Implementing equity-based hiring practices and non-discrimination policies and recognizing alternative pathways into the profession can attract teachers from vulnerable and marginalised groups.

One obvious way for schools to link with communities is by engaging parents, since parent involvement leads to greater learning outcomes. Students' perceptions of how interested their parents are in them and in their school life is also related to their own attitudes towards education and their motivation to study, and those relationships are particularly strong among low-performing students. A clear way to promote students' well-being is to encourage all parents to be more involved with their children's interests and concerns, show interest in their school life, and be more aware of the challenges children face at school (EI/OECD, 2022). The importance of parent involvement is routinely acknowledged, but there are often many barriers to parent participation in

school life which must be addressed if a real partnership is to be built. Partners must work together to remove barriers in policies that hinder parent's regular participation in school activities and foster engagement with their children, schools and communities (OECD, 2018).

This has implications for the role of technology in education; it is also important to provide parents with opportunities to enhance their digital skills so they can play a more active role in their children's learning. It is also essential to involve other stakeholders in the process. Alongside teachers, this includes students, parents, and other community members. By involving all stakeholders in the process, it is possible to ensure that the use of technology in education is aligned with the principles of social justice and human rights (Holmes, 2023).

As developing climate-ready students and schools is likely to be a key outcome from session 1, it is important for delegations to reflect on stakeholder collaboration. The collective shift towards a sustainable future can only be achieved through school collaborations with local businesses, non-governmental organizations and community organizations, which can provide access to resources, expertise and practical experiences. Education for sustainability can also be supported by collaborations between teachers, researchers, and the social sector to develop evidence-based approaches to education and materials for school curricula. Teacher representatives should also be involved in the promotion and support of sustainability for a more just and equitable future.

Policymakers need to inspire and enable innovation, and empower change through enhanced autonomy, encouraging risk-taking, and identifying and sharing best practice. They can work towards this

shift in thinking by building trust through healthy relationships with the profession and constructive transparency. Many of the countries with the strongest student performance also have strong teachers' unions who are treated as trusted professional partners, working constructively with policy makers to facilitate a constructive dialogue based on research and evidence (OECD, 2018). For meaningful collaboration between governments and unions, social dialogue must be institutionalized and regular. It must go beyond information sharing and consultation to include co-development of policy and collective bargaining.

For the school-as-community-hubs model to be effective, teacher leadership must first be enabled and respected. Having professional opinions respected and knowing that they can lead in their areas of expertise is integral to teachers' sense of self-efficacy. The belief that strong top-down leadership is the only way that schools can deliver high quality education has become increasingly discredited. Distributed leadership, however, which provides the conditions for all teachers to show leadership in practice and policy, has become increasingly linked to sustained improvements in student outcomes and wellbeing. EI and Cambridge University's study on teacher leadership (EI/Cambridge University, 2012) reviewed the evidence on the links between teacher wellbeing, motivation and student achievement and set out the conditions for creating teacher leadership to flourish. In a world where financial pressures are everywhere it is worth noting that empowering teachers and enabling teacher agency is not about funding, it is a question of trust – it costs nothing to trust teachers.

Teachers' knowledge and self-efficacy can be enhanced when schools collaborate with higher education institutions. Such partnerships are mutually beneficial, as

action-research can enhance professional practice and contribute to strengthening the evidence base on effective pedagogical methods.

Both the OECD and EI have emphasised that the pandemic has highlighted the essential role of schools as central to communities in the education of children and young people (OECD/EI, 2021). Critical to delivering quality education were Education Support Personnel (ESP). During the pandemic, school nurses, guidance counsellors, social workers, IT staff and others provided lifelines to the daily operations of schools. Many of these roles required sustained collaboration with not only the local community and parents, but also the health sector, and other government agencies. The ISTP delegations should consider how to strengthen the partnerships between ESP and teachers, how to ensure ESP's important role for quality education is recognised and valued, and how to ensure that ESP are part of inclusive policymaking processes.

Partnerships between education institutions and industry can enhance equitable and quality education, particularly for vocational education. However, partnerships between the public and private sector must have students at the centre, and their education safeguarded from commercialisation. Teachers' professional autonomy should be protected and their expertise respected in the context of partnerships with industry.

Future education policies need to include a focus on how to support schools in enhancing the relationship between schools and their communities in ways which benefit students' learning and the work of teachers. Despite examples of developments in community and extended schools, more countries should take the initiative to think hard about how to support schools in enhancing the well-being of their students within their communities and to emphasise

this role in their mission. The current enhanced understanding of the value of schools as centres for student well-being and learning needs to be translated into public policy (EI/OECD,2022).

Policy implications

- Can governments and teacher unions jointly establish national commissions, as recommended by the High-Level Panel on the Teaching Profession, as a means to work in partnership to tackle the alarming teacher shortages experienced in many countries?

- Can teacher unions and governments chart an approach to enhancing community engagement in education and fostering increased collaboration between multiple education stakeholders, such as by creating "community schools" whilst always ensuring that partnerships are for the benefit of students, and never with profit or commercial interests at the centre?

Relevant HLP Recommendations:

The recommendations of the UN High-Level Panel on the Teaching profession provide a comprehensive roadmap to transform the teaching profession. Listed below are the recommendations that are most relevant to the discussions of this ISTP session. Together at ISTP, governments and unions have an opportunity to discuss how to ensure that these crucial and timely recommendations are implemented.

1. *Teachers are the central element in the transformation of education systems. Yet teachers do not work in a vacuum. To be effective, they require an enabling environment and holistic social support for their work. Governments should*

develop economic and social policies that support teaching and learning through adequate and equitable funding for education and lifelong learning. Such policies should ensure that parents and families have the time and capacity to support learners, that learners have access to adequate nutrition and healthcare services, that learning spaces are safe and inclusive, that learning institutions have adequate infrastructure and connectivity, and that the teaching profession enjoys high status and support.

25. *The capacity for educational leadership must be enhanced through high-quality CPD, including exchange programmes and research initiatives, which should be an integral part of teachers' careers. To support teachers in their needs, CPD should be designed and determined in dialogue with the teaching profession. Opportunities for CPD should be equitable, free of charge and part of official duties. Elements of quality CPD include sustained duration, focused content, active learning, a collaborative nature, modelling of effective practice, and the provision of coaching and expert support and opportunities for feedback and reflection.*

27. *Policies should promote teaching as a collaborative profession, with adequate space, time and resources for collaborative planning, communities of practice, and reflective and reflexive practice by and among teachers, within and beyond their education institution. Such efforts can be supported by education authorities. Teachers should be encouraged to use interdisciplinary teams to teach core curricula content through thematic units.*

28. *To strengthen collaboration further, governments should foster local, regional and international teacher collaboration through partnerships between educators and schools to share best practices and resources; develop repositories of open digital educational resources; create exchange programmes for teachers and foster research collaboration; and develop and maintain digital platforms that connect teachers, researchers, policymakers and organizations.*

50. *Teachers and their organizations should engage in research and dialogue with education systems and teacher training institutions in order to ensure that teachers can play a leadership and innovation role in relation to new subject matters, pedagogies and technologies within a learner-centred approach. Part of this work should be the creation of strong partnerships between innovative schools and teacher preparation programmes that enable prospective teachers to learn in practice as well as in theory.*

Conclusion

ISTP is a unique platform which brings together politicians, OECD policy makers, and teacher trade unions. But it is more than a debating forum as it ends with each participant country setting a series of joint commitments to take forward learning from the discussions in a way which will impact upon and improve individual education systems, improving outcomes for children and young people – which must always be our aim. EI urges delegates to contribute to the debates in this spirit.

Appendix

EI/OECD: Opportunities, guidelines and guardrails for effective and equitable use of AI in education

Introduction

These opportunities, guidelines and guardrails for effective and equitable use of AI in education (Guidelines) represent positions on the development and use of Artificial Intelligence (AI) and digital education developed by the OECD Secretariat and Education International. The Guidelines aim to help educational jurisdictions and organisations representing teachers and educators alike in navigating what are fast moving developments in AI. A first version was given to education ministers and teacher union leaders at the International Summit of the Teaching Profession 2023. The Guidelines build on the OECD Council Recommendations on Artificial Intelligence (2019) and on Broadband Connectivity (2021). They also build on the ten principles on *Effective and Equitable Educational Recovery* (2021) developed by the OECD Secretariat and Education International in 2021.

One of the legacies of the COVID 19 pandemic is the increased use of and attention given to digital technology in education. Most school systems have used remote online teaching and learning at some point during the health crisis, and teachers, learners and families have realised the

potential of digital technology for teaching and learning, as well as its limitations. The massive shift to digital learning has also exposed persistent inequalities in access to technology and connectivity as well as the crucial role of schools as social in-person places contributing to learning but also the wellbeing of students.

The irruption of digital technology continued in 2022-23 with the sudden visibility of generative AI applications (for example based on large language models such as ChatGPT or SAGE). These advances have made the power of AI visible to the public and raise fundamental questions about tasks and skills where the activity of humans and machine complement and/or substitute for each other. How does AI enhance human capacity? Does it lead to cognitive off-loading where AI performs or even outperforms at existing human skills level? Does it lead to human skill attrition when this off-loading occurs and these skills get less exercised? For educators, AI challenges a number of educational activities such as traditional models of homework assignments and assessment. This general-purpose technology has the potential to lead to another "industrial revolution" and will not leave education models untouched.

Both sets of experiences have pointed to the growing importance of the digital

transformation of education (as well as in our societies) and cast light on the opportunities and challenges of embedding digital technology in education – and dealing with general purpose digital technology such as generative AI, which can be disruptive for teaching staff.

Opportunities of AI and digital technology

The use of digital technologies in education holds significant promise. When applied to education, technologies such as artificial intelligence, machine learning and robots, have the potential to improve the quality and equity of learning, free teachers' time to focus on their teaching and provide students with new routes to learning. These educational objectives may become a reality with the support of technology, provided that teachers and learners are given the right conditions to use such technologies.

First, AI-powered adaptive learning tools can help track learners' progress and pinpoint where learners need help and where they excel. They may support teachers in providing greater personalised teaching and learning in the classroom and allow learners to work with more autonomy and engagement under the supervision of their teachers. Some may help students remaining engaged in their learning. Social robots may support teachers and other educators as tutors, peers or instructors. Classroom analytics that provide feedback to teachers in real time about the management of their class or give them feedback about their teaching after class may also help them to improve their teaching and their students' learning. Simulators, virtual and augmented reality may allow learners, especially those in vocational education and training programmes, to develop practice-oriented skills in a safe environment which mimics the workplace.

Second, AI-enabled technologies can support inclusive education and equity. AI-based accessibility tools using techniques such as speech-to-text and auto-captioning can serve visually- or hearingimpaired learners to better participate in classroom activities. Other learning difficulties such as dyslexia, dyscalculia, dysgraphia could also be detected sooner and addressed with a mix of technology and human interventions. A number of countries have made (or are in the process of making) such applications available to schools and higher education institutions to support students with special or specific needs. In countries with advanced information systems, early warning systems powered by AI could help identify students at risk of dropping out, who often come from disadvantaged backgrounds, and support teachers and administrators in designing appropriate interventions. Where students have access to the Internet and devices, technology may have the potential to make learning resources and knowledge accessible to broader audiences, including in lower income countries, and to help develop social and collaborative skills among students and teachers.

The effective use of AI tools in education depends on having trained and qualified teachers, who have the confidence and the autonomy to choose both the digital tools and how they are applied in the classroom. Some technology applications are currently designed to support the teaching profession. If implemented effectively, they may allow teachers to personalise their teaching, to receive feedback on it, but also to delegate or make some of their administrative tasks less time consuming. They may also help to remove burdensome tasks and free up teachers' time for instructional design and activities.

Besides serving individual learners and educators, technology can help build communities of learners and make learning

more collaborative, providing new means to enhance goal orientation, motivation, persistence, and the development of effective learning strategies. Similarly, technology can build communities in which educators share and enrich educational resources and practices and collaborate on professional growth and the institutionalisation of professional practice. It can also help system leaders and governments develop and share best practice around curriculum design, policy, and pedagogy, and allows doing certain types of research at an unprecedented pace.

Generative AI applications (such as large language models) present both opportunities, unknowns and risks. They can support teachers in generating draft lesson plans and providing opportunities to develop their students' critical thinking in the classroom. These applications can support a shift in pedagogical models from having students learn answers towards supporting them in asking the right questions, navigating ambiguity and competing claims, and distinguishing fact from opinion. As the technology continues to develop, it may not only become a powerful learning tool for students and a convenient aide for teachers, but also contribute to the enrichment of dedicated technology solutions such as adaptive learning systems or customised AI answers to students' questions based on their learning journey. All this is dependent on teachers and learners having the capacity to review and adjust what AI creates.

Risks of AI and digital technology

There are also risks to the use of digital technologies in education. One risk is that inequalities can result from unequal access to technology or from stronger effectiveness of those tools for advantaged students;

weaker usage by students and educators intimidated by technology; disparities in the capacity of educators and learners to make full use of their potential; and challenges to assure the quality of digital resources.

Concerns also include the privacy, security and use of learners' and teachers' personal information and data as well as excessive time spent on technology-based activities, especially for young children. The use of algorithms to make automated decisions on learning interventions (e.g., identify potential early school leavers), progression or admission could, as with similar human decisions, entail risks of bias of developers, society and past datasets *vis-à-vis* certain student groups, resulting in different forms of discrimination and perhaps amplifying and making them systematic compared to their occurrence in traditional, fully human-driven education. Another challenge is that the identification of these risks could lead to unethical human behaviour, for example expelling students at risk of dropping out or stigmatising students with special needs rather than supporting them.

The effectiveness of many AI-enabled tools and whether they contribute to improving learning outcomes or decreasing educators' workload is not always well established. AI-enabled tools may be more suitable for some subjects, given that not all forms of knowledge or processes of learning are easily transferable to a digital format. This could lead to a prioritisation of forms of learning that are easily digitised, jeopardising the breadth of the curriculum and the quality of education. The increased use of technology could also lead to the atrophy of human skills and agency and an increased dependency on the availability of AI and other technology, including for skills that are essential for success and well-being. This is particularly the case for generative AI, which entails some other risks such as the reliability and traceability of information,

the risk of cultural bias, and raises new challenges for traditional assessments.

The pandemic has highlighted the importance of the teacher/pupil relationships and the social dimension of schooling. Too much time spent on technology can lead to the social isolation of students (and adults), which can have a negative impact on mental health as well as learning outcomes, especially for younger learners. In some cases, AI-enabled tools could add to the workload of teachers rather than an aide, especially when tools are not designed for and in collaboration with the teaching profession.

There are also new risks for teachers in terms of access to technology, wellbeing, professional development opportunities, as well as regarding the use of teacher data. One of the risks lies in an unethical use of the data collected about teachers' performance in the classroom.

Addressing these risks requires a coordinated effort across all education levels and all policy areas, from investing in digital infrastructure and equipment for education institutions, learners and

teachers to developing sound regulations addressing issues such as data protection and privacy, cyber security, educators' digital competencies, curricula with a meaningful integration of digital technologies, and quality assurance.

As with many new technologies, the rise of AI and other technologies highlights the importance of using and developing them in an ethical way, based on human and labour rights. This is particularly important for education where the development of cognitive, social and emotional skills is vital for a whole child education.

The guidelines proposed below aim to support governments, teacher unions, teachers and other educators to engage in a constructive dialogue to harness the opportunities offered by AI and other advanced technology and mitigate its risks for educational goals that are shared by the education community: equity, quality and efficiency.

1. Equitable access to affordable, high quality connectivity

Educational jurisdictions should create digital learning infrastructures at a system level that are accessible to all learners and educators in and outside of school. This strategic physical infrastructure should allow for a quick and equitable shift to remote learning if necessary.

The pandemic exposed existing inequalities in the quality access to the Internet and digital devices, including in the most affluent countries and jurisdictions. Good quality connectivity and access to the Internet is a pre requisite to the equitable widespread use of advanced technology for learning, and governments should ensure that a comprehensive and reliable physical infrastructure is available to all schools and learners, both at home and at school. This will contribute to equity in availability, quality, and affordability of devices and connectivity.

Digital transformation can exacerbate existing inequity if access to the Internet and thus learning tools and resources are unevenly distributed among learners. Some solutions that were explored during the pandemic could be continued, such as providing specific educational websites or learning resources at zero cost when accessed through mobile Internet or the lending of equipment to families who need it. This is particularly important to preparation for another crisis, whatever its nature, which could lead to the return of remote education – or for evolving the current schooling model.

At the same time, the uneven distribution of connectivity or equipment should not, in itself, be a reason not to reap the benefits of technology where possible. As it was the case during the health crisis, innovative solutions can be designed to make digital technology accessible to a majority of teachers and learners, including developing tools and platforms that can work with intermittent access to the Internet or with unstable or low connectivity. While providing access to effective connectivity for all members of the population is becoming a high priority responsibility for governments, AI-enabled tools can still be used where this is not yet a reality.

2. Equitable access to and equitable use of digital learning resources

Educational jurisdictions should make available a set of quality digital learning resources to teachers and students, accessible in school and at home. Teachers should be able to use them at their professional discretion within the context of school and jurisdiction policies. Jurisdictions should provide guidance about usage expectations, in consultation with teachers and other education stakeholders, so that all learners, including educators, can have adequate opportunities to develop their digital skills. This soft infrastructure made up of digital learning resources and tools could provide the positive conditions for a quick and equitable shift to remote learning if necessary.

Beyond connectivity and devices, governments should ensure that teachers and learners have access to high quality digital learning resources to support their teaching and learning in and out of class. Making digital learning platforms and resources easily usable on mobile devices may enhance access and use. The pandemic has led many countries to expand their platforms of digital learning resources or to expand their licenses with education publishers. There should be strong emphasis on user-friendly access to digital resources and the provision of a variety of resources that allow teachers to select those that correspond to their teaching preferences (and learners to their learning preferences).

In the case of learners, the provision of adaptive learning systems that can be used in school or at home should be considered, as this provides a means to possibly alleviate loss of learning opportunities at home. As examples and evidence accumulates that specific digital solutions can support learners with special and specific needs, those should be mainstreamed across all digital learning resources platforms.

In the case of teachers, short videos, simulations or other materials that can easily be integrated in lesson plans and learning scenarios could be made available. Other digital tools that could help them design their lessons or generate easily learning materials and examples should also be considered.

For learning resources that are (still) relatively expensive, for example augmented or virtual reality tools, mutualising their use across schools could be an option.

In addition to learning resources, digital tools that support teachers in their administrative tasks could free them to design their lessons, to teach, and support students in their academic learning and socio-emotional development. While equity in the access of decent quality learning resources must be a key objective, variations and inequity can come from a variety of use across classrooms and schools.

While respecting teachers' pedagogical autonomy, jurisdictions should provide clear guidance about the types of digital competences learners should develop, and how. Typically, it should be across all subjects rather than by solely requiring a separate focus on "technology" or "computer science" as a subject. Curricula and other forms of guidance for teachers could be reviewed and designed, in partnership with teachers and their representative organisations. Providing training on the use of generative AI may become an important step to avoid new equity gaps based on differing abilities or confidence to use such applications.

3. Teacher agency and professional learning

The critical and pedagogical uses of up-to-date digital learning resources should become an integral part of teachers, school principals' and other educators' professional competences, fostered in initial education but also within continuous professional learning opportunities and professional collaboration. Recognising the importance of teacher agency, efficacy and leadership is key for allowing them to make a critical use of digital learning resources and design rich learning scenarios with their students.

The rapid pace of development of AI-enabled technologies raises new challenges for all professionals, and this is also true for teachers and other education practitioners. Jurisdictions should recognise that the effective use of AI in education depends on a trained and qualified workforce, which is trusted and supported to apply AI-enabled tools as and when it augments their teaching and enhances the relational and social experience of learning.

While most initial teacher education programmes include some introduction to digital tools for learning, the use of and critical engagement with digital resources in teaching should be mainstreamed in all subjects in initial teacher education programmes, so that student teachers feel at ease with the use of digital tools in the learning scenarios they offer their future students. Teachers' AI literacy should be cultivated, so they understand AI techniques, can critically assess AI productions and recommendations, and creatively use AI in their teaching.

While initial education is important, learning on the job is what makes a good teacher a great one, and continuous professional learning for teachers should include the use of technology in teaching and learning. Sustained, relevant, accessible and timely training options should be offered to teachers, but some other solutions could also be explored. Teachers who focus on developing advanced digital skills, such as "teacher coaches" or "technology champions" within schools or at the regional level, represent an approach that seems to have been efficient in different jurisdictions. At the school level, such teachers can support their peers interested in expanding their use of technology in their teaching, either within specific schools (or a school network/group). It is important to ensure opportunities for professional collaboration and peer learning as well as mentoring schemes. At the regional level, some expert teachers could also curate and disseminate ideas about the effective use of technology in education to their peers. Working conditions need to be fostered whereby teachers are enabled to establish professional learning networks and teacher leadership across schools to evaluate the quality of AI applications and contribute advice on what applications should be useful for teachers in the future Ultimately teachers should have the pedagogical space to make choices around EdTech in the classroom.

Consistent, high-quality professional learning and development is vital for all teachers if they are going to be able to use information and communication technology confidently and effectively. Teachers should be able to decide on the form of professional learning they receive. Many teacher unions provide such professional learning opportunities and those that do not should be supported to do so.

The greatest risks of technology may come from an uncritical use of digital resources. Teachers need the time, professional development and working conditions to be able to design and combine digital resources to use in and out of class. While they do not need to become data scientists, they must be at ease with quantitative information and dashboards – as well as other forms of information generated by AI and other technology. Conversely, dashboards and information provided by digital technology should become more teacher- and userfriendly.

Digital technology is a powerful tool itself to support collaboration and peer learning among teachers, thanks to public (and private) dedicated platforms. Jurisdictions should provide such open source and teacher-curated platforms and enable teachers, within the school day, to share materials, ideas, comments on other existing ones across schools. Teacher contributions should receive some form of recognition. Indeed, learning through professional learning communities is usually the most effective for teachers and other professionals.

4. Student and teacher wellbeing

The use and development of AI-enabled technology should put learners' and teachers' wellbeing and mental health to the forefront, including by keeping a good balance between digital and non-digital activities. Ethical guidelines on digital communications which recognise that learning is a relational and social experience involving human to human interactions should be created in partnership with teachers and their organisations.

While digital technology has the potential to improve teaching and learning, for example by diversifying learning scenarios for students or by making education more aligned with contemporary society, the excessive usage of digital technology and expanded possibilities of diffusion of unethical content present risks for the wellbeing of learners and teachers. The pandemic has highlighted the fact that education is a relational activity. Indeed, studies show that a large majority of students and teachers prefer in-person teaching and learning and appreciate the social and emotional interactions offered by in-presence schooling.

Beyond a certain point, the use of digital devices correlates with lower learning outcomes. Despite the lack of conclusive evidence on this correlation, it is reasonable to limit time on digital technology, not the

least to ensure that future generations can still enjoy activities that have been valued by human beings for centuries and which will help them value and continue human heritage and culture into the far future. While the exposure to technology has become a part of current society that education systems cannot ignore, learning activities that do not involve digital technology should remain an important part of children's development and students' formal education. Calibrating the right approach and technology use to the right learners will be key. Teachers should not be expected to be constantly in front of their computer screens analysing data or responding to management or parental requests.

Yet digital technology also has the potential to support students' and teachers' wellbeing, for example by diagnosing at-risk students

or teachers who may require emotional or clinical support, in tandem with robust teacher and student wellbeing policies and programmes. Specific tools could be designed which help detect bullying (and cyberbullying). AI may also help address student well-being through data analytics connected to digital tools and human services related to socio-emotional learning. This could help give feedback to teachers about how they respond to students' socio-emotional needs both in and outside the class. More generally, ensuring safe and conducive learning environments requires a pro-active approach to AI literacy for both teachers and students, making the understanding of its evolving strengths and limitations a fundamental part of modern education.

5. Co-creation of AI-enabled digital learning tools

Jurisdictions should encourage the involvement of teachers, students and other end users as co-designers in the research and development process of technology to help ensure the usefulness and use of AI-enabled digital tools. An innovationfriendly ecosystem that makes innovation and continuous improvement a culture should allow technology developers to experiment and pilot some tools with the support of teachers and learners.

Technology can sometimes be "in advance" of what stakeholders find appropriate, and sometimes "irrelevant". Citizens should have a say in the use of solutions designed to support them.

While some technology companies have emerged which focus on education, most past solutions deployed in education have been just derivatives of applications that had been developed for other sectors of society. Some general-purpose tools such as generative AI show that they can be extremely powerful despite not necessarily being "educational" in purpose.

Education technology companies have technology competences that many teachers typically do not have. This is why a constructive dialogue with them is necessary and desirable. For education technology companies to develop "useful" tools for teachers, teachers need to be involved in the design process, piloting and monitoring and evaluation of these tools. Pedagogically sound and culturally relevant tools can be

ensured through such a co-design with the teaching profession. This may require building further capacity within the teaching profession. As this may increase the use of those tools, this would also be aligned with developers' economic incentives. Teachers also need to feel that they are protected from being used for testing inappropriate products, and jurisdictions should elaborate some clear rules in that respect.

Government-funded institutional programmes could involve government, university researchers, industry, teachers and other education stakeholders in defining which types of tools should be prioritised and in researching their effective use within schools. Some governments have already developed such programmes. This practice-engaged research and development programmes should go beyond the functionality of technology to analyse how technology is used in context and its impact on both equity and quality. They should also work on the social and legal adjustments

that would be required for the widespread adoption of the solution they propose. This "co-creation" principle should be a principle even when it is challenging to involve end users, for example, students with special needs. One important, positive side effect of these programmes would be to help

understand and shape the social context in which AI-enabled education technologies would best be used (the classroom, home, etc.), and facilitate social negotiation and acceptance of these tools by the teaching profession and society.

6. Research and co-creation of evidence through disciplined innovation

Jurisdictions should foster research about the effective use of digital tools in education, including practice-engaged research projects that allow teachers to innovate in their classrooms, co-design the uses of technology with researchers that evaluate and document the conditions under which technology use works and for whom. Researcher-led projects can cast light on the most effective uses of AI-enabled technology. In principle, digital transformation enables quicker feedback and improvement loops than in the past, which education systems should benefit from through an active focus on research.

The pandemic has shown that education systems can be innovative when needed and has also shown how much teachers and school leaders are able to develop their own "microinnovations". Beyond decisions related to the expected use of digital tools in the classroom, educational jurisdictions should work to establish opportunities for teachers to co-design new pedagogically sound and culturally relevant classroom tools. Teacher unions could contribute to that process.

Co-creation is essential for education systems to have useful digital tools for teaching and learning, but teachers can also contribute to the generation of research evidence by collaborating with researchers about its effective uses. Innovation can only take place in a climate which is dominated by trust that those innovating will be able to learn from any failure without receiving a punitive response, and failure and risk taking should be tolerated within reasonable expectations. Teachers should thus be able

to propose research evaluation of their practices or ideas.

Research projects about uses that are envisioned and developed by university researchers are also valuable and should also be encouraged. Jurisdictions should support researchers to carry out such research and share the findings of research projects involving teachers to evaluate how digital technology can effectively be integrated in their teaching and benefit their students' learning and socio-emotional development. Education jurisdictions should thus encourage and make it possible for teachers to be part of research projects making these uses more visible to the teaching profession. In most cases, the focus of the research should not be technology in itself, but the use of technology and how it benefits learners or teachers and in what conditions.

The use of digital platforms can allow for research designs that generate much

quicker results and improved solutions than past "analogic" methods. This type of research should be encouraged, under the condition that its results are publicly shared for the benefit of the whole education community.

Research into the safety, efficacy, and equity implications of AI-enabled tools in education should be emphasised, for example on their impact on cognition and child development.

7. Ethics, safety and data protection

Data protection policies should ensure that the collection of data contributes to securing effectiveness and equity in education while protecting students' and teachers' privacy. Educational jurisdictions should provide schools and teachers with clear guidance about data protection and possibly pre-negotiated contracts or guidelines when they resort to commercial solutions. They should ensure that safety or possible algorithmic bias are tested and addressed in their policies. Clear ethical guidelines should also be developed. The ethical use of data about teachers should be negotiated with teachers and their representatives as part of bargaining agreements.

The use of AI-enabled technology raises new concerns about data protection and privacy. Many jurisdictions have strong data protection regulation in place, which apply to education and the access to student and teacher data. Some have specific education data protection policies. In particular, the access to administrative data tends to be strongly regulated. Data protection implies strong underlying cybersecurity. The rise of generative AI also raises new forms of data protection issues where "children data" are not protected by law from reuse and resale. Where not already the case, data protection policies should also extend to biometric data.

Jurisdictions should also consider regulations and policies related to the safety, effectiveness, and possible bias of digital tools before they are introduced in education systems. New classes of concerns beyond data protection, privacy or safety have appeared with AI-enabled digital tools as they allow for stronger pattern recognition and greater automation than

other technologies. This implies that policies should go beyond privacy and safety and include some institutional mechanisms to monitor the effects of using AI and other digital tools on equity and quality in education.

Privacy and data protection must be balanced against other important educational objectives such as equity or effectiveness, which may require the collection of personal data, including sensitive data. For example, while it is preferable to avoid demographic characteristics as key parameters in AI algorithms, when possible, the possibility to identify and address algorithmic bias and thus improve fairness depends on the collection of personal data. Algorithmic bias is one of the new risks related to the emergence of AI in education, as some groups may be discriminated against based on past data, the training model of the algorithm or just work better for some groups than others: countries should ensure that new digital tools are tested to avoid

possible biases. Even in the absence of biases, as AI effectiveness is largely based on detecting "profiles", the risk of human stigmatisation of students (or teachers) in different categories should be addressed. There is a general need for monitoring and evaluation of the effectiveness of digital tools on a variety of dimensions.

In many instances, when it comes to the use of digital tools in school, school boards, school principals or even teachers are left with the responsibility of interpreting or implementing regulations regarding personal data protection and other policies with limited guidance, for example when contracting some digital tools. Jurisdictions should provide guidance and support to school principals and teachers to implement these rules in a way that does not place additional burdens on teachers.

The regulatory and ethical use of teacher data by their employers should be defined and negotiated with teacher unions and other relevant stakeholders. As a matter of principle, an ethical use of data collected about teachers should support the quality, effectiveness and fairness of their teaching and the learning of their students, regardless of their personal characteristics.

8. Transparency, explainability and negotiation

When using digital tools based on advanced technology that are high stakes for students, teachers, or educational establishments, such as digital forms of evaluation and assessment, educational jurisdictions should be transparent about the objectives and processes by which algorithms reach their recommendations. The uses of high stakes digital tools must be discussed and negotiated with all educational stakeholder.

One challenge of AI-enabled technologies is that most people do not understand how they work and what can be expected of them. Generative AI is a striking example as it is currently difficult to fully explain the details of how it operates.

Transparency is essential for uses of education technology, particularly in cases that are high stakes (if and when they happen) – as well as the verification of the accuracy of their performance for all sub-groups of the target populations in education. Explaining how they work to teachers, students and families is important, and information, education and training about them should be provided. At the very least, explaining the criteria or factors which they take into account when describing their objectives and functioning is essential. Policy makers should balance the expected effectiveness of tools against their explainability or transparency.

In any event, jurisdictions should always be transparent about the objectives, functioning and possible limitations of the digital tools they (or their schools) use, notably when they have high stakes for individuals. It should be standard practice that there is constant, constructive dialogue between jurisdictions, teacher unions and other stakeholders about the introduction of broad-impact digital tools. This matches democratic values while making their trustworthy use easier.

9. Human support and human alternatives

As AI-enabled digital tools will allow for increased automation of parts of educational processes, from administration through to teaching and learning, jurisdictions should ensure that learners, teachers, and other education stakeholders, can receive timely human support when they face a problem, and, when appropriate, a human alternative to the AI-enabled tool.

As the use grows of AI-enabled tools by administrators, learners, teachers and other educators, decision processes based on AI diagnosis and suggestion may be relied on more and more by human beings as the default position. In some cases, automated processes could make it more difficult to ask questions and receive a better understanding of the rationales of decisions that affect education stakeholders. In this context, it is important for jurisdictions (or other relevant bodies) to be able to provide human help in a timely manner when education stakeholders have a problem, for example when they believe that the automated process has led to a mistake (for example in the case of an assessment or an admission process), or when they would need advice about how the system will use the information they input (for example in a school application process). AI tools are more trustworthy if they are framed with the "human -in-the-loop" idea.

It is not always possible or desirable to allow people to "opt out" of the use of digital tools. For example, the use of data in contributing to the improvement of education, particularly of disadvantaged groups, relies on a comprehensive participation in data gathering. It is also not practical for families to individually opt out of digital solutions chosen by educational institutions to support their children's learning. This does not mean that human alternatives should not continue to be considered. For example, evaluations that are high stakes for learners or teachers require a human alternative. While the pandemic showed that AIenabled remote proctoring can help students take exams or tests remotely when in-presence exams were very difficult to offer, their continued use should include an alternative human proctoring option given that students from different households have very different levels of connectivity, living space and examination conditions when at home. Jurisdictions should thus consider whether human alternatives to AI-enabled technology should be provided, when appropriate.

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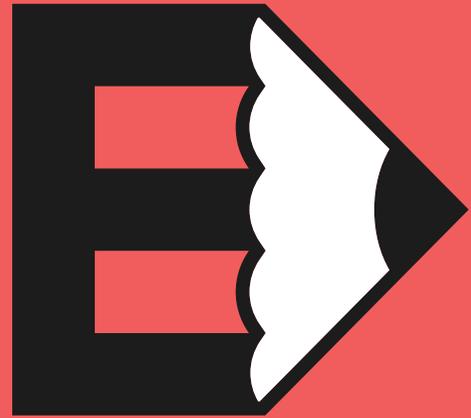
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