Making schools more inclusive: Teaching students with special needs

Why is this topic important?

The number of children with special needs, defined in terms of learning challenges related to physical, cognitive, and emotional impairments, ranges from 93 million to 150 million worldwide (UNICEF, 2013). As schools in many countries move towards integrating students with special needs into mainstream classrooms, one challenge teachers face is how to provide quality instruction to a more diverse group of learners, including some with significant challenges, in the same amount of time. Managing and using classroom time effectively becomes critical for ensuring all students have an equal opportunity to learn and, if needed, access to extra supports to achieve similar outcomes. What are the current challenges teachers face in educating students with special needs? What can teachers do to foster even more support for those with special learning needs in the future? How can schools support teachers in their quest to do so?

What is the evidence?

The motivation for inclusive education is typically framed from the perspective of students with special needs, often in terms of equal educational rights, and the academic and social benefits of inclusion. However, for many teachers, successfully creating and managing an inclusive environment that welcomes all students and meets all individual learning needs, impacts how classroom time is used. More specifically, in classrooms with more students with special needs, teachers tend to report spending less time teaching. The disparities in the amount of time spent teaching in classrooms with students with special needs compared to those without, is a consistent and concerning trend (Figure 1) that impacts both student populations, and requires instructional strategies that can, at the same time, be both universal and student-specific.

Another ongoing challenge for teachers working in inclusive classrooms is the need for additional professional development. Indeed, the OECD’s Teaching and Learning International Survey (TALIS) 2013 showed that 23% of teachers across all sampled countries reported a high level of need for professional development geared towards teaching students with special needs, the highest of all professional development need areas (OECD, 2014). School principals also reported that the lack of teachers with special needs training was one of the top three barriers to instructional quality for these students. The good news is that TALIS indicates that teachers who work in inclusive classrooms report fewer problems with student behaviour and disruption than teachers in classrooms without students with special needs. Thus, a priority for schools should be providing more professional development while supporting inclusive classroom instruction.
The underlying principles of Universal Design for Learning

Universal design for learning (UDL) is one framework that addresses the disconnect between a demographically changing student population with diverse learning needs, and a “one-size-fits-all” curriculum (Edburn, 2005). Rather than view some students as deficient or learning-challenged, UDL encourages teachers to question whether the curriculum itself is in some ways deficient or too narrow. Similar to universal design structures in architecture, the flexibility of UDL can benefit all students, even if designed with certain populations in mind. It is important to note that UDL is not a set of pre-packaged activities. Rather, as seen below, it’s a set of three underlying principles with the goal of motivating student learning and maximizing options for students to demonstrate that learning (Meyer, Rose and Gordon, 2016).

- **Principle 1: Multiple means of representation**
  Learners, including students both with and without special needs, differ in the ways they perceive and comprehend information (National Centre on Universal Design for Learning,
2012). Some may process information more effectively through visual, digital, or auditory means, rather than printed text. Not only do learners have different preferences in this regard, but using a range of ways to convey information can also help students make connections between concepts.

- **Principle 2: Multiple means of expression**
  Students need different modes to process information and to express what they know. Although students with language impairment and cognitive disabilities need different means to express themselves, all students can benefit from more options for expression beyond formal testing. The degree of engagement is also a part of processing and expressing one’s learning, especially for young children.

- **Principle 3: Multiple means of engagement**
  Teachers can motivate students to learn using activities that tap into background knowledge, culture, or personal relevance, and involve either individual or group work. In designing instruction with these principles, teachers can use class time effectively and efficiently to ensure all students are engaged and ready to learn.

**Students with Greater Learning Needs**

Even when teachers embrace a UDL approach to teaching and planning, students with special needs may still require even more support and time to keep pace with other students. Fortunately, UDL can be combined with more individualized approaches when necessary. In the United States, for example, the individualized education plan (IEP) goals of students with special needs, which are jointly developed by parents and school officials, should form the basis of a teacher’s tailored daily instruction, whenever possible. Teachers can also consider using continuous progress monitoring via both formal and informal assessments (Bryant, Bryant and Smith, 2016). To assist students with special needs and their peers at the same time, teachers may group by level during part of the class, to provide more attention to some students, or use heterogeneous groups for students to practice collaborative learning. Peer-assisted learning can also be particularly effective for students with special needs (Saenz, Fuchs and Fuchs, 2005).

As we look to the future, we can take additional steps to meet the needs of students with special needs. While many school systems have already expanded classroom inclusion, pushing for an even greater level of inclusion worldwide is still warranted. Another priority should be continuing to work to provide the appropriate educational services and specific learning accommodations that each student needs. Allowing for extended time, providing scaffolding and other such traditional accommodations are important. But the expanded and effective use of assistive and adaptive technology can also help us meet these students’ specific needs in tomorrow’s classrooms.

**Guiding questions for discussion**

- What are some effective techniques for managing teaching time in classrooms that include students with special needs?
- What professional learning opportunities have you had that have been particularly helpful in enabling you to handle the challenges of integrating students with special needs?
What types of policies would you implement to promote educational equity for special needs students at the classroom, school, and system levels? How would you better support teachers in educating students with special needs?

For further reading


Making schools more equitable: Teaching disadvantaged students

Why is this topic important?
Socioeconomic disparities in academic achievement have attracted the attention of researchers and policy makers since the 1960s (e.g., Coleman et al., 1966; Peaker, 1971; Jencks, 1972; and comprehensive reviews, such as Buchmann, 2002; and Sirin, 2005). Students from disadvantaged groups, including those whose parents have little education, those who live in poverty or have few resources, those whose native language is different from the language of instruction, and those who have recently migrated, tend to perform lower on standardised tests than non-disadvantaged students (OECD, 2015; OECD, 2016a). Education can be an engine of social inclusion and can help reduce broader social inequalities if and only if all students, regardless of their various disadvantages, are equipped with equivalent opportunities to realise their full potential. Data from the OECD Programme for International Student Assessment (PISA) indicate that this is possible. The overall quality of student learning outcomes does not have to be compromised by the integration of language minority and immigrant students. Some education systems organise resources in a way that produces a high levels of skills for all, including for those students who come from disadvantaged households (OECD, 2015; OECD, 2016a). What challenges do teachers face when teaching students from socioeconomically disadvantaged households? Do those challenges differ from those they face in engaging students from language minorities or those who have recently migrated? Do teaching strategies and approaches differ depending on the source of disadvantage? How can schools and education systems as a whole support teachers in their efforts to provide equity?

What is the evidence?
Countries differ greatly in the extent to which socioeconomic condition, language fluency and migration status help explain and contribute to the level of students’ academic performance. Nevertheless, the capacity of different education systems to equip students from different backgrounds with similar set of skills and attitudes towards learning, is a central and long-standing focus of global education monitoring initiatives. There are big differences among countries in whether disadvantaged students are able to overcome initial disadvantage, as well as in the extent to which teachers feel they have the skills and the support that they need to deal appropriately with the challenges that teaching disadvantaged groups can entail (OECD, 2015; OECD, 2016a).

In teaching students from diverse backgrounds, especially when it comes to non-native language speakers, teachers often feel the need for additional systemic support. As Figure 1 below shows, on average, around 1 in 10 teachers participating in the Teaching and Learning International Survey (TALIS) reports the need for additional professional development when teaching in multicultural settings. In some countries, the reported need is significantly higher than the average. For example, in Brazil, Mexico and Italy, over 25% of teachers feel they need more assistance in understanding the ways to address and support their students’ needs in multicultural classrooms.

Figure 1: Teachers’ needs for professional development in a multicultural setting
Challenges to overcome

Disparities in the learning outcomes of students not only reflect differences in the level of educational resources they receive, but also differences in the out-of-school experiences they have, the support they receive at home, and the attitudes and expectations both they and their parents have (Downey and Condron, 2016; Downey, von Hippel and Broh, 2004).

Another challenge that teachers of disadvantaged students have is covering all the intended curriculum even though their students have language difficulties, possess low abilities to start with, or do not necessarily value themselves as learners. Many countries offer high-quality early childhood education to help ensure that disadvantaged children start school at less of a disadvantage. Yet, many disadvantaged students do not have access to such programmes, or lag behind at school, despite their participation in them (OECD, 2017).

Positive expectations and solutions

When students perform below the standards for their grade level because of socioeconomic or language factors, and not because of specific learning difficulties, evidence shows that teachers and schools should not lower their expectations for these students. Instead, they should help them catch up by working with them individually, or by offering remedial classes. Language instruction and support should be offered when language is the primary barrier (See Box 1 below for examples), and migrant students should be
placed in mainstream classes as soon as possible. In some countries where socioeconomic conditions seem
to have the lowest impact on performance, schools and teachers hold high expectations for all students.
And in education systems that have closed the performance gap between disadvantaged groups and more
advantaged students the most (such as Germany), targeted language support and additional remedial
classes were provided to help level the playing field (OECD, 2013; OECD, 2015; OECD, 2016a).

**Box 1. Using technology to help non-native language speakers**

The targeted use of technology has proven to be quite effective for supporting non-native language acquisition.
While technology cannot replace real classroom instruction, it can be used to complement and supplement the
work of trained teachers and professionals working with non-native language learners. Using mobile technology to
access information and communicate with other learners or educators, places language learning at students’
fingertips. Technology can also help shift instruction away from the traditional teacher-centred model, which is
sometimes ill-suited to promote language acquisition, and instead open up new possibilities for collaboration,
social interaction and access to multiple resources which can enhance non-native language learning (Eamer, 2013).

Three examples of how technology can promote language acquisition are:

**Digital communities of practice**

Non-native speakers engage with native speakers through online discussions. This allows non-native speakers to
actively participate, sometimes even more than native speakers, and to feel a sense of legitimacy through
academic socialisation. This promotes student motivation by enabling social collaboration (Kim, 2011).

**Digital storytelling:**

Non-native language learners use compilations of photos, videos, audio and text to produce meaningful output in
the language they are learning (Rowinsky-Geurts, 2013). Students may find this approach cognitively challenging
(e.g., difficulty with vocabulary or verb conjugation) but rewarding, as they employ complex thinking and strategies
to complete their creations.

**Computer-assisted language learning (CALL)**

Computers monitor student progress and provide targeted feedback.

CALL materials are especially useful for learning specific vocabulary, grammar or pronunciation skills (Presson,
Davy and MacWhinney, 2013).
In the case of poorly performing disadvantaged students, there is tension between ensuring that they are adequately challenged through exposure to materials that match their current skill levels, and having them follow the same pace as other students. However, it is particularly important to avoid sorting disadvantaged students into different (less academic) education tracks or classes, or to have these struggling students repeat grades, with the intention of giving them more time to master their coursework and catch up with their peers. These practices run the risk of trapping disadvantaged students in a cycle of poor performance and disadvantage and, even more importantly, of creating a culture that justifies (at its best) and promotes (at its worst) low ambition, low expectations and low levels of effort among disadvantaged groups. Indeed, PISA data show that principals in schools with higher percentages of socioeconomically disadvantaged students are more likely to report that student learning is hindered by teachers’ low expectations of students (OECD, 2013), that parents hold less ambitious expectations for their children’s futures and that the disadvantaged students hold similarly low expectations of themselves.

Increasing opportunities to learn in the future

PISA data also indicate that socioeconomic disparities in both the content and pedagogical approaches students are exposed to in school may contribute to disparities in academic performance by social class, and migrant or language status (OECD, 2016a; OECD, 2016b). Thus, to help ensure equity in tomorrow’s classrooms, it is necessary to increase disadvantaged students’ opportunities to learn. This could be achieved through the development of a more focused and coherent curriculum, a thorough evaluation of the effects of policies and practices that sort students by ability, and stronger support for teachers who teach heterogeneous classes. The power of technology, as in the example in Box 1 above, can also be harnessed to support and complement the work of teachers. However, as the learning benefits of digital technologies depend on both the quality of the technologies and the readiness of teachers to make the most of them, such use should be introduced only after careful piloting and proper evaluations of their impact.

Guiding questions for discussion:

- How can teachers help disadvantaged students develop ambitious, yet realistic, expectations for themselves? How can this ambition then be effectively channelled to help these students maximize their potential?
- What strategies have you found work best when teaching students from various disadvantaged groups in the same classroom? Are there specific strategies you have employed with language learners that have proven successful?
- Technology is helping reshape how disadvantaged groups are supported in their learning by giving teachers new ways to provide targeted, remedial instruction to language learners and other disadvantaged students. Are there additional ways you feel you can use technology in the classroom to provide disadvantaged students with increased opportunities to learn?
- If you were minister for a day, would closing the achievement gap be a key priority for you? If so, what kinds of policy initiatives would you implement first?
For further reading:


Parents as partners in teaching

Why is this topic important?
Parents are often expected to be partners with teachers and principals, and to play a direct role in their children’s schooling (Gunnarsson et al., 2009; Zhao and Akiba, 2009). This partnership can take many forms including talking with their child about school; supervising their child’s progress, including helping with homework; participating in decisions about school activities; exchanging information with teachers; and volunteering for school activities (OECD, 2016). The majority of parents interviewed through the OECD Programme for International Student Assessment (PISA) reported attending scheduled meetings at school (OECD, 2017). But less than half of parents reported exchanging ideas on their child’s development with teachers, and only a small minority of parents volunteered to support school activities. How important is it to have parents as active partners in the educational process? What can be done to encourage more parental participation and involvement?

What is the evidence?
There are many reasons for developing school and family partnerships. If parents and teachers establish relationships based on trust, schools can rely on parents as valuable partners in education. Getting involved at school also allows parents to obtain first-hand information about the school’s learning environment, it teaches them how to navigate the education system, it demonstrates to their child that education is important, and it allows for more parental control of their child’s behaviour (Grolnick and Slowiaczek, 1994; Lareau, 1996; Muller and Kerbow, 1993).

Socio-economically advantaged communities tend to have more positive family involvement in school than disadvantaged ones. But evidence shows that efforts to build positive school and family partnerships can bolster school performance in economically distressed communities (Avvisati, 2014; Domina, 2005). Partnerships can also improve parenting skills, help parents feel connected, and assist disadvantaged families with health, nutrition, and other services.

Studies have also found that parental involvement in a child’s education has a positive influence on student outcomes (Hill and Craft, 2003; Miedel and Reynolds, 2000). Additionally, getting parents involved may be the most productive way to prevent and respond to bullying and other serious behavioural problems at school (OECD, 2017).

Six ways to promote positive parental involvement
Epstein’s (2002) framework for school-family-community partnerships defines expected results, practices and challenges for six different specific types of parental involvement: parenting, communicating, volunteering, learning at home, decision-making, and collaborating with the community. This framework can help educators develop more comprehensive programmes of school and family partnerships.

Schools should establish processes that ensure parent participation practices are constantly promoted and developed. To accomplish this goal, Epstein’s research shows that one important first step is to set up a partnership action team, which includes teacher, parent, administrator and student representatives. This
action team can guide the development of a single, unified plan which includes all six types of involvement as described below.

1. **Support parenting skills**

   PISA data from 18 countries confirm that across wide cultural, socio-economic and individual differences, the value of supportive parents cannot be overstated. Students whose parents routinely engage in day-to-day home-based activities, such as eating a meal together or spending time “just talking” (as shown in the top portion of Figure 1 below) not only have higher learning outcomes as measured by PISA, but are also more satisfied with their lives (OECD, 2017).

   ![Figure 1. Parents’ activities with their child and at their child’s school](image)

   Note: These are average values for 18 countries/economies that implemented the PISA parental questionnaire.


   School-based family support programmes have been particularly effective for disadvantaged students (Scott, O’Connor and Futh, 2006). Family support activities also help schools understand their students better by enabling families to share information about their children’s talents, culture, background, and needs.

2. **Set up comprehensive and inclusive communication plans**

   Parental involvement is enhanced through effective communication (Epstein, 2002). Communication plans should include a large variety of interactions including regular face-to-face meetings with parents; notices, memos, phone calls and e-mails; clear information on school policies, programmes and reforms; and
information about specific awareness campaigns (e.g., the value of regular attendance, or safe and acceptable internet use).

Simply explaining to parents how to get more involved can go a long way in promoting positive participation. In a controlled experiment in disadvantaged French schools, parents of middle-school children were invited to participate in meetings about how to get more involved in their children’s education (Avvisati, 2014). Participation increased parents’ school and home-based involvement and, in turn, reduced the incidence of truancy and necessary student discipline.

PISA data show that language barriers can hinder the participation of parents from immigrant or minority groups (OECD, 2017). In areas with large immigrant populations, schools may need to partner with immigration and social service agencies to provide interpreters and information packages in multiple languages. To communicate effectively with all families, including those that are harder to reach, schools should find ways to be more welcoming of parents from culturally, linguistically and socioeconomically diverse backgrounds. New technologies can also offer effective solutions to communicate with parents.

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An experiment in Chile offered each participating parent the chance to receive high frequency information via SMS messages regarding the attendance, behaviour and mathematics test scores of their children. After four months, the students involved had significantly higher math grades, improved attendance, a lower prevalence of bad behaviours, and were less likely to fail the grade at the end of the year (Berlinski et al., 2016).

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3. **Encourage in-school volunteering**

Volunteering is a way for families to get involved and support the school community. Such programmes can free up resources, broaden students’ experiences and learning opportunities, and enrich the lives of volunteers. Available evidence suggests that when adult volunteers are present, and students see adults taking school and education seriously, while respecting learning, positive attitudes toward school are promoted (Henderson and Mapp, 2002). Schools can collect information about parental availability through regular surveys and organize volunteering programmes around flexible schedules to send a clear message that all are welcome.

4. **Involve families in homework and learning activities**

Many parents, particularly in disadvantaged contexts, feel they are not capable of supporting their children with schoolwork. Helping families understand, monitor, and interact with students on homework can be an important extension of classroom instruction. Homework assignments can include interactive activities that engage families in positive conversations about schoolwork. Schools can provide assistance to parents on
how to support their child’s interests and skills. For example, PISA results show that, through active engagement, parents can foster their child’s enjoyment of reading (Borgonovi and Montt, 2012).

5. **Include families in decision-making**

School councils, committees and parent organisations are important institutions to ensure that parents’ voices are heard on important school decisions. Giving parents a voice in school decisions can increase their engagement and foster a feeling of belonging to the school community. Besides setting up effective representative bodies, schools can include families in decision-making by regularly asking them to give feedback on a variety of policy issues.

6. **Collaborate with the community**

Strong partnerships with parents place schools at the center of communities, making them hubs around which the community gathers its resources. These resources and services can help schools implement larger initiatives, such as after school programmes, or smaller projects, such as creating a new playground. Schools can help families take advantage of the cultural resources and social support services available in their communities by distributing information and partnering with agencies and organisations.

As we move into the future, finding additional ways to actively involve parents is a goal that can truly help students succeed, both in school and in the wider social context.

**Guiding questions for discussion**

- What are the positive aspects of having parents that are more involved?
- In your experience, are there any negative aspects to having increased parental involvement and engagement? If so, how do you deal with those aspects?
- Do you use technology to reach out to parents on a regular basis?
- If you were minister for a day, what policies or programmes would you initiate to get disengaged parents involved and on-board with their child’s success?

**For further reading**


Designing better teacher feedback for the future

Why is this topic important?
If done well, feedback – broadly defined as any communication teachers receive about their teaching, based on some form of interaction with their work (e.g. observing classrooms and the teaching of students, discussing teachers’ curriculum or the results of their students), (OECD, 2014a) – can empower teachers and students alike. For new teachers, feedback (from peers, mentors and others) is especially important (Jensen et al., 2012). According to Hattie and Timperley (2007), truly effective feedback addresses three essential questions:

- Where am I going? (What are the goals? This is referred to as feed up.)
- How am I doing? (What progress is being made toward these goals? This is referred to as feed back.)
- Where to next? (What do I need to do in the future to make even better progress? This is referred to as feed forward.)

For teachers, feedback may not only create opportunities to reflect upon goals for teaching practices and student learning (feed up) and progress made in light of those goals (feed back), but it also supports and motivates teachers to develop and grow in their own careers (feed forward) (Bill & Melinda Gates Foundation, 2010; OECD, 2013). Much of this potential for improvement depends on the extent to which feedback is purposeful (i.e. related to learning goals), regular and formative, and whether it’s embedded in schools, school networks and education systems as a lever for school improvement (OECD, 2005). According to international data, many teachers today unfortunately see feedback systems as largely administrative tasks, disconnected from meaningful professional development (OECD, 2014a). How can we redesign teacher feedback mechanisms to better address teacher needs and goals? And how can we do so in a way that keeps outcomes and attitudes positive for teachers and students alike?

What is the evidence?
In the 2013 Teaching and Learning International Survey (TALIS) (OECD, 2014a), teachers were specifically asked about the feedback they receive at their school sites. Teacher feedback is common across TALIS countries, with 88% of teachers reporting receiving feedback on their teaching, though this varies from lows of 55% in Iceland and 57% in Italy to highs of 97% in Abu Dhabi and 99% in England (OECD, 2014a).

Who is most likely to provide feedback to teachers?
According to TALIS (OECD, 2014a), feedback is most commonly provided by school principals (for 54% of teachers), members of the school management team (49%) and other teachers (42%). Feedback from external individual and bodies (29%) and assigned mentors (19%) are the two least common sources. Moreover, many individual teachers receive feedback from multiple sources. On average, 56% of teachers report receiving feedback from one or two sources and 31% receive feedback from three or more sources. Feedback from students can also be used to improve teaching practices (see Box 1).
Which feedback methods are most common?
Feedback can be based on classroom observations, student surveys, assessments of teacher knowledge, and analyses of student test scores, self-assessments, or discussions with parents. As Figure 1 below illustrates, on average, 79% of teachers report receiving feedback following classroom observations, while all other methods are mentioned by over half of teachers across countries. However, there are big differences between countries. To illustrate, while feedback following classroom observations is reported by more than 95% of teachers in Malaysia, Poland, Romania, Singapore, Abu Dhabi and England, less than 50% of teachers report such feedback in Finland, Iceland, Italy and Spain.

Feedback is positive for pedagogical and personal development
Feedback can stimulate teachers’ personal attitudes and feelings about their jobs, their teaching practices, and their professional development. As Figure 2 below shows, after feedback, positive changes occur in the pedagogical and personal development of teachers. Over 70% of teachers across TALIS countries report a moderate or large increase in their teaching confidence after receiving feedback, 62% report that the feedback they received resulted in positive changes in their teaching practices, and 59% report that it led to moderate or large positive changes in their use of student assessments to improve learning.

Box 1. Norwegian teachers use formative student feedback
In 2011, teacher appraisal principles and guidelines were published as part of a joint national initiative by the Norwegian Student Organisation and the Union of Education Norway, the country’s largest union for teachers and school leaders. The guidelines describe how students and teachers can work together to evaluate learning objectives, working methods, learning strategies, content and organisation of classes by using questionnaires, dialogues, journals and observations. The results provide concrete steps for follow-up and distribute responsibilities and timelines for both students and teachers.

The need to make teacher feedback more effective and motivating

Yet, despite feedback’s positive outcomes, many teachers still perceive that the feedback systems their schools employ do not foster the development of better teaching practices. International data show that more than half of teachers report that the appraisal and feedback systems at their schools are mostly used simply to fulfil administrative requirements. Implying that the feedback does not motivate or drive performance, less than 40% of teachers report that the best-performing teachers in their schools receive the greatest recognition, or, on the contrary; that teachers would be dismissed for consistently underperforming (31%) (OECD, 2014a; 2014b).
Figure 2 – Focus of teacher feedback

Percentage of lower secondary teachers who report that the feedback they receive emphasises the following issues with a “moderate” or “high” level of importance

Items are ranked in descending order within categories, based on the percentage of teachers reporting

The future of feedback

In the face of these possible challenges to motivation, how can we keep outcomes and attitudes high as we move into the future? Using video observations and new platforms such as professional learning communities (PLNs), have the potential to help teachers get the most out of feedback.

While teachers commonly receive feedback via classroom observations (as we saw in Figure 1), video observations are increasingly being used to help teachers reflect upon and improve their teaching. Video observations can be conducted quickly and at any time by individual teachers, as part of a peer learning exercise, or by school leaders as part of regular teaching observations. A recent Harvard University study, “The Best Foot Forward Project” (Kane, 2015), found that video observations help teachers critique themselves, especially in terms of time management and questioning.

In today’s digitally savvy world, PLNs, such as Twitter, Edmodo, LinkedIn and Facebook, allow teachers to connect with one another in informal settings, whenever and wherever they choose. Early research into PLNs highlights the potential these communities have to help shape teaching and learning, and how they nurture the emotional, social, and cognitive aspects of teachers’ professional growth (Trust, Krutka and Carpenter, 2016).

As we move into the future, new tools, techniques and perspectives may help lead the way to better feedback for all.
Guiding questions for discussion

- How has feedback from school leaders, peers, mentors, students and others, helped improve your teaching practice?
- Which kinds of feedback, and from whom, do you feel help your teaching most?
- Which kinds of feedback do you feel are most helpful for your professional growth and development? Is there anything that could be done to better connect the feedback you receive to your professional growth and development?
- If you were minister for a day, what would you do to help make feedback systems more meaningful for teachers?

For further reading

Bill & Melinda Gates Foundation (2010), Learning about teaching research report: Initial findings from the measures of effective teaching project, Bill & Melinda Gates Foundation.


Kane, T. (2015), The Best Foot Forward Project: Substituting Teacher-Collected Video for In-Person Classroom Observations, Center for Education Research, Harvard University, Boston, MA.


http://dx.doi.org/10.1016/j.compedu.2016.06.007.
Active learning: The way forward?

Why is this topic important?

Active learning is defined as any teaching method that “involves students in doing things and thinking about the things they are doing” (Bonwell and Eison, 1991). In active learning, students are not just passively listening to the instructions of the teacher. Instead, they are actively or experientially involved in the learning process. Active learning is a purposeful and reflective activity that encourages students to fully understand the relevance of the learning material while simultaneously reflecting on its meaning. It is an interactive and engaging activity, in which there is constant communication between teachers and students, and real-life examples related to the content are used to construct learning tasks.

Active learning has gained popularity as a teaching method, with increasing numbers of educators and academics realising that to truly learn, students must do more than just listen; they must read, write, question, discuss, explain, brainstorm, and actively participate in the learning process (Freeman et al., 2014; Meyer and Jones, 1993). Teachers use a variety of teaching strategies when engaging students in active learning activities. Some examples of active learning techniques include whole class or small group discussions, debates, writing lesson summaries or short papers, answering questions or describing topics, roundtable discussions, problem-based learning activities and group presentations. Indeed, a range of names are used for “active learning” activities, but common to them all is that they each require more from students than just listening: the active participation of students is a necessary component. Why does active participation and learning help students understand differently from traditional techniques? What are some ways to incorporate active learning into tomorrow’s classrooms? How can active learning strategies propel student achievement even higher in the future?

What is the evidence?

A growing body of empirical evidence indicates that active learning practices are associated with higher academic achievement (Freeman et al., 2014; Prince, 2004; Meyer and Jones, 1993). Students who actively use higher order thinking skills (such as analysis, synthesis, evaluation, and planning) during the learning process, consistently outperform those who do not actively do so.

The latest data from the OECD Programme for International Student Assessment (PISA) shows that cognitive-activation instruction (an active learning technique) is associated with an average increase of 19 points in mathematics scores, across OECD countries, after accounting for other teaching strategies (See Figure 1 below). The index of cognitive-activation instruction measures the extent to which teachers encourage students to acquire deep knowledge through instructional practices such as giving students problems that require them to think for an extended time, presenting problems for which there is no immediately obvious way of arriving at a solution, and helping students to learn from the mistakes they have made.
Figure 1. Improvements in student mathematics scores when teachers use cognitive-activation instruction more often

Note: Statistically significant values before accounting for other teaching strategies are marked in a darker tone. All values after accounting for other teaching strategies are statistically significant. Other teaching strategies refer to the PISA indices of teacher-directed, student-oriented and formative-assessment instruction.

Source: OECD, PISA 2015 Database, Figure 2.2.

The following list of positive aspects and outcomes of active learning has been adapted from the work of Svinicki (2001), Bronwell and Eisen (1991) and Hoellwarth and Moelter (2011):

- Active learning improves the retention of new information, reinforces important insights and skills, and improves levels of understanding so that learned material can be transferred to new situations.
- Active learning creates personal connections to topics, thus increasing students’ intrinsic motivation and engagement with lesson content.
- Active learning offers opportunities to practice important interpersonal skills, such as collaboration, communication and teamwork.
- Active learning builds self-esteem and personal agency through activities and interactions.
- Active learning helps develop higher order thinking skills such as analysis, evaluation, reflection and synthesis.
- Active learning accommodates a variety of learning styles and personal preferences.
- Active learning creates a sense of community in classroom.
Box 1. How can active learning techniques be incorporated into the classroom?

As Figure 2 illustrates, one of the most common active learning activities is small-group discussions. These promote long-term retention of the material, an understanding of its application in a wider range of situations, and higher order thinking, communication, collaboration and wider social skills (Bonwell and Eison, 1991). Data presented in Figure 2, from the TALIS 2013 survey, show a substantive difference between countries in the frequency of use of this practice by secondary education teachers. In particular, just over 30% of teachers frequently use small groups in Korea, Italy, Israel and Japan, while almost 80% of teachers use this practice frequently or in nearly all lessons in Denmark and Abu Dhabi.

Figure 2. Frequency of using small groups discussions as a teaching practice in secondary education, by country

Note: These data were reported by teachers and refer to a randomly chosen course they were teaching at the time. Countries are ranked in descending order, based on the percentage of teachers who used small groups "frequently" or "in all or nearly all lessons".

Note: The data from the United States should be interpreted carefully. This is because the United States did not meet the international standards for participation rates.

Source: OECD, TALIS 2013 Database, Table 6.1.

A good way to begin is to select the active learning techniques the teacher has the most knowledge of and experience with (Bronwell and Eison, 1991). These can also be low-risk practices of shorter duration that are more structured and familiar to students, such as writing exercises or class discussions. After becoming comfortable with these, teachers can move towards more involved practices.

Giving clear instructions is critical for active learning. Goals, timeframe, roles and procedures for each task need to be clearly outlined before students engage. Addressing student feedback in a timely and confident manner, and using it as an opportunity to reflect on the learning process (Doyle, 2008) works well.

It is important to remember that just because students are “active” it does not mean that they are necessarily...
What are the possible barriers to success?

There are a number of possible obstacles that need to be taken into account when deciding whether to engage in active learning practices (Cherney, 2011; Eison, 2010). First of all, there are numerous practical considerations. Teachers may lack the necessary materials, equipment and resources, or they may not have enough class time to engage in active learning practices while having to cover the planned and expected content. In some cases, class sizes may be too large for effective implementation of some active learning techniques. Educational tradition or lack of school or administrative responsiveness, may also present barriers for the integration of new pedagogies.

In order to effectively implement active learning in the classroom, teachers need to be knowledgeable about the requirements of different techniques. Creating a supportive, collaborative atmosphere that’s conducive to open and lively, but respectful and constructive interaction is key. But, perhaps the biggest barrier of all may be the fact that introducing these techniques involves a certain degree of risk-- risk that teachers will lose control, lack the necessary skills, be criticised for abandoning traditional methods, or that students will not engage or will not learn sufficiently (Bronwell and Eison, 1991). Given these possible barriers, it’s important to introduce active learning strategies in a positive way. Box 1 above illustrates some of the important steps in doing so.

What is the way forward?

Active learning strategies are not new. Active learning is an established teaching method that brings with it a wide range of important student benefits. It is a pedagogy that promotes skills that are increasingly relevant in the modern world (Cherney, 2011). Even so, the question of what needs to be done to further promote the worldwide integration of active learning techniques is multi-layered.

At the wider, system level, introducing active learning pedagogies into classrooms will not happen by itself. Instead, this will require careful planning, targeted policy action and the investment of necessary resources. At the local or school level, school administrators and managers must recognise the need to provide ongoing support to teachers, especially when new pedagogies are introduced and during the evaluation of new learning outcomes.

But in the end, it is teachers who will be delivering active learning techniques and who therefore bear most of the responsibility for its pedagogical outcomes. Any reform of instructional practices must therefore involve teachers, and must genuinely support their efforts in introducing these practices into the classroom environment (Cherney, 2011). Teachers need to be ready to master new pedagogies, and to put them into practice (Eison, 2010). This may sometimes require that they leave their comfort zone. But, this can ultimately lead to more fulfilling pedagogical experiences, both for their students and for themselves.
Guiding questions for discussion

• In what way do you feel active learning can best help in the development of 21st Century skills such as learning to learn, higher order thinking, collaboration, critical thinking, problem solving and creativity?
• Which subjects and content do you feel are best suited to active learning techniques?
• What are some of the challenges in incorporating active learning into your lessons? Are there any resources that could help you better implement these techniques?
• If you were minister for a day, what would you do to help teacher’s implement active learning techniques?

For further reading


Svinicki, M. (2001), EDP 398T College Teaching Methodology, University of Texas.
Alternative education methods as a lever for teaching innovation

Why is this topic important?

Alternative education (AE) is commonly defined as those pedagogical approaches and learning environments that differ from mainstream education. AE methods are currently being implemented in schools across developed and many emerging economies as a safety-valve for those students who leave school early, as well as for those who have been unable to learn and thrive in the traditional education system.

Why is it important to develop alternative strategies to reach these students? OECD (2016), data show that while spending per student has increased an average of 17% in recent years, significant improvements in student outcomes have not been reported. Coupled with the need to improve the quality and efficiency of education provision, while enhancing equity and facing new societal needs (e.g. providing 21st Century skills), the importance of innovation in public education cannot be overstated (OECD, 2014). However, systemic innovation in education has proven quite difficult (Whitty, 2004). This is partly due to pressure from reform attempts which have focused mainly on curriculum control and high-stakes testing and assessment, and have therefore resulted in the ‘thinning out’ of pedagogic innovation.

Nevertheless, in the U.S., AE institutions are present in 2,000 school districts and serve over 500,000 students (Vogel and Fresques, 2017). In the EU, there are at least 13 countries that have developed a network of Schools for Second Chance (S2C), the French network being the most established. Although these schools are extremely different across and within countries, they do share a series of related practices that have proven successful in engaging students who possess an unsuccessful track record in mainstream education (Rennie Center for Education Research & Policy, 2014). Examples of these methods include developing a holistic approach to students’ capacities and needs, focusing on meaningful experiences and interests, and specific work involving tutoring and individualization (Lange and Sletten, 2002; European Commission, 2001). In the United Arab Emirates, new programmes around creative design and innovation and English language instruction reflect this alternative approach.

How much do alternative education methods and innovations such as these influence today’s traditional classroom environment?

How can AE methods be used to positively influence pedagogy and innovations in learning in the classrooms of tomorrow?

What is the evidence?

At its core, AE has always been a source for innovation and experimentation. Thus, it is no accident that many educational principles and pedagogical approaches that are now considered mainstream, regardless of whether they are widely implemented or are still a part of the innovation narrative, have their roots in AE (Sliwka and Yee, 2015). Traditional alternative schools, or those schools that have been explicitly committed to the principles of formal alternative approaches (Montessori, Waldorf and Reggio-Emilia, among others), have continued experimenting and updating their methodologies, particularly in early education. Indeed, the persistence and growing number of schools that fall under the umbrella of ‘free schools’ (schools that use AE methods exclusively, particularly non-directive methods) in Catalonia (now at
50) and the U.S. (now at 100), for example, is evidence of the success of offering alternative educational opportunities.

**Difficulty measuring AE success**

A particularly interesting case that mixes the goals of alternative education with those developed by S2C beyond early childhood and primary education, is the Federation of Public Innovative Schools (FESPI) in France, a network of 12 schools that have tried to show their successful practices through diverse case studies. But, as with most AE schools, as Dahlin (2007) found in looking into the impact of Sweden’s Waldorf Schools, gathering specific evidence on the success of AE can be difficult, due to the small number of schools developing AE approaches, their holistic, intertwined sets of principles, and the importance of family contexts (usually highly-educated parents). Aron (2006) likewise points out that there are few rigorous studies to date that examine AE student outcomes, and suggests we therefore need to rethink the types of measures which should be targeted and monitored.

**Project-based Learning: Innovation through alternative education methods**

Currently, PBL is one of the leading innovative practices being implemented in schools (and networks of schools) worldwide (See Figure 1 below). In fact, a significant number of the school networks researched by Istance and Paniagua (forthcoming) report that they are implementing diverse forms of PBL. Although there is a good deal of evidence that discusses its positive impact (e.g., Hmelo-Silver, Duncan and Chin, 2007), other research suggests that the link between PBL instruction and positive student achievement outcomes cannot be established with certainty (Kokotsaki, Menzies and Wiggins, 2016). This contradiction sheds light on the fact that research on PBL has a difficult time capturing its multiple dimensions of impact, and that certain qualitative variables are still difficult to capture using standardized tests.

In terms of pedagogical principles, PBL encapsulates many of the learning goals that have been present in most AE approaches. Examples of this include the importance of learning by doing, connecting learning with real world problems, the role of the tutor as supervisor and moderator, the central use of group work and collaboration, and emphasising the end-product of the project (Harmer, 2014).
AE methods that foster innovation

Another important way in which AE methods are fostering innovation comes from networks of schools that share part, if not all, of the principles of AE without ascribing themselves to any particular movement. As discussed in the research being developed by the Centre for Educational Research and Innovation (CERI) and Istance and Paniagua (forthcoming), these networks of schools are implementing practices such as gamification; blended, experiential or embodied learning; and new literacies which, in most cases, can be seen as updated implementations of long-standing teaching approaches rooted in AE.

Another common approach shared by these networks is the emphasis placed on students’ voice and agency coupled with a growing awareness of the need to be acutely sensitive to their individual differences. This can be achieved through AE approaches including peer collaboration, diverse forms of blended learning, a focus on the potential of all children, and a non-restrictive interpretation of the curriculum.

As shown in the text box above, project based learning has also gained significant attention in the last few years. As Figure 1 below shows, there is great variation in how frequently teachers engage in this specific AE practice.

**Figure 1: Proportion of teachers that engage their students in projects that require at least one week to complete**

As the graph above shows, this specific AE practice is especially predominant among teachers in Mexico (57%), Abu Dhabi (53%), Chile (53%), and Australia (52%), while it is used considerably less often in Croatia (10%), The Czech Republic (12%) and South Korea (13%). Overall, 28% of teachers across OECD countries participating in the Teaching and Learning International Survey (TALIS) engage their students in projects that require more than one week to complete.

There are a myriad of other scattered practices and programs (e.g., open-space learning, focus on play, strategic questioning, and art and creativity programs), and new learning concepts that are rooted in the importance of non-directive teaching. They provide time for students to experiment, formulate ideas, discuss and test. These innovative techniques can be traced back to AE concepts, although they are also informed by new evidence-based research (van den Broek, 2012) and more refined developments within sociocultural and experience-based approaches, as well the use of new technologies (Istance and Paniagua, forthcoming).

According to OECD work on Innovative Learning Environments (OECD, 2015), six overall strategies are needed to ensure the further implementation and sustainability of innovations. 1. Creating culture change in schools; 2. Having a clear focus and prioritising targets and goals; 3. Generating knowledge about the learning that is taking place; 4. Fostering collegiality (collaboration and cooperation among teachers); 5. Using internet and communications technology (ICT) and digital platforms; and, 6. Creating specific change agents and specialist institutes to support change and transformation. The current desire to adopt an innovation agenda offers new ways to (re)connect with the ongoing and diverse experiences of AE as a platform to expand the way teaching and learning relationships, and learning environments, are imagined. Doing so can better address the innovation challenges that many schools and school systems will face as we head into the future.

**Guiding questions for discussion**

- Some long-standing practices, such as Project-Based Learning and cooperative learning, are still confined to single schools or networks of schools. What challenges and barriers are involved in scaling up these methods for the future?
- Most AE methods seem to lack strong evidence to support their wider implementation. What kind of evidence would these approaches need to prove their success? What role, if any, does evidence play when implementing a new approach in your classroom?
- How is success defined in your school and what types of indicators would be suitable to describe that success?
- If you were minister for a day, which AE approaches would you wish to see implemented most in your country’s schools? Why?
For further reading


A profile of tomorrow’s quality teaching

Why is this topic important?
Available research evidence points to teacher quality as the most relevant school variable in determining the success of an educational system (Hattie, 2003; OECD, 2005). In other words, an education system is effective when its teachers use teaching practices which improve student performance and develop the full potential of every student, regardless of socio-economic background, native language or migrant status. Good teaching stimulates and guides students’ development so that their achievements go beyond their own expectations.

However, understanding what makes teaching “good” or “effective” has proven a difficult question to answer. While most people can clearly remember the joy of learning from a good teacher, and the occasional frustration brought about by exposure to poor teaching, it would be quite difficult for many to pinpoint the precise differences between what makes good teaching good, and what makes poor teaching less so. What are the indicators of good teaching? How can we further improve teacher quality as we move into the future? The OECD has engaged in the collection of rich and insightful international data showcasing specific examples of teaching from diverse worldwide educational contexts which can be considered best practices.

What is the evidence?
Teaching quality is a difficult concept to apprehend through measurable concepts. However, it can be inferred based on observable indicators, such as the demonstration of student learning gains, the implementation of quality processes, and the perception of teacher self-efficacy.

Teaching strategies and practices leading to student outcomes
A common method of assessing teaching quality and efficient learning practices is the evaluation of student outcomes and their learning gains1.

The OECD’s Teaching and Learning International Survey (TALIS) and Programme for International Students Assessment (PISA) findings consistently show that student-oriented teaching strategies which place the student at the centre of the activity and give learners a more active role in lessons than in traditional teacher-directed strategies, have particularly positive effects on student learning and motivation. Active-learning practices include, but are not limited to, students working in small groups, encouraging students to evaluate their own progress, assigning students longer projects (requiring more than one week to complete), and using information and communications technology (ICT) for class work.

Cognitive activation, which aims to teach pupils strategies such as summarising, questioning and predicting in order to solve problems, has also been identified as an effective teaching practice. PISA data show that,

1 Such a method does have questionable reliability, however, as students’ learning happens both in the classroom and outside of the school. Additionally, it is affected by other non-teaching related factors (e.g., student socio-economic background), and it is the result of cumulative exposure to a range of teaching approaches over the years. The empirical measurement of teaching quality in such a framework thus requires controlling for as many factors as possible to measure the net effect of a given teaching strategy.
across OECD countries, students who report that their teachers use cognitive activation strategies in their mathematics classes achieve higher mathematics scores.

**Quality processes in teaching**

Quality processes are the specific, observable teaching practices that develop and support education quality, and that are validated through improved student performance and well-being. Professional collaboration among teachers in the school is one example of a quality process. According to PISA results (OECD, 2016a), on average across OECD countries, teachers’ collaboration has proven to be positively associated with student performance in science, after accounting for the socio-economic profile of both the students and the schools. According to TALIS results (OECD, 2014a), having a collaborative culture within the school is one of the factors that shows the strongest association with teachers’ self-efficacy and job satisfaction. As Figure 1 below shows, in general, the more often teachers participate in collaborative activities with their colleagues, the more self-efficacy they report. Other quality processes include teachers’ active engagement with students, teachers giving meaningful feedback to students about their school work, and the cultivation of a safe, respectful and supportive environment.

![Figure 1. Frequency of collaboration and reported self-efficacy](image)


**Drivers of self-efficacy and teaching quality**

Bandura’s (1986) social cognitive theory defines self-efficacy as an individual’s beliefs about their capabilities to successfully accomplish a particular course of action. (Thus, in essence, self-efficacy is teaching quality *from the teacher’s point of view.*) According to TALIS, self-efficacy encompasses three dimensions: quality in classroom management, in instruction, and in student engagement. As it has proven
to be positively related to student achievement (Caprara et al., 2006; Muijs and Reynolds, 2002; Woolfolk Hoy and Davis, 2006), self-efficacy is a good proxy measure for teaching quality. TALIS data shows, for example, that teachers who are more confident in their own abilities are more likely to engage in active-learning practices, which are known to be effective.

Many valuable practices are found to affect self-efficacy and, therefore, teaching quality. TALIS results suggest that promoting teacher co-operation and a positive school climate, developing teacher leadership and allowing and encouraging teacher participation in on-site decision-making, are all highly beneficial to teaching quality. Participation in high-quality professional development which includes, for example, opportunities for discussion of active learning methods, increased collaboration among colleagues, and the time and resources to plan and innovate with other teachers, also has a significant influence on teaching quality. Additionally, ensuring that there are multiple avenues for teachers to receive feedback on their work, and promoting the use of comprehensive sources of information and data for teacher appraisal, are also key to supporting the continuous improvement of teachers and, ultimately, schools. As we move into the future, these practices should therefore be supported and encouraged to further nurture quality teaching.

**Guiding questions for discussion**

- What is the recipe for quality teaching? Do you feel the ingredients vary when supporting the development of students’ knowledge and skills, their attitudes, and their well-being? How so?
- Have you come across specific teaching practices that have been particularly successful in some contexts?
- How much collaboration is taking place at your school or with other schools? Have interactions and cooperation with fellow teachers changed the way you approach teaching?
- Have you recently participated in professional development activities? If so, what positive impact did these have on your teaching?
- If you were minister for a day, what specific steps would you take to assist teachers in their efforts to promote and deliver quality teaching?

**For further reading**


Social media as a platform for tomorrow’s teaching

Why is this topic important?

The internet has become a significant part of our daily lives, particularly as mobile handheld devices, such as smartphones and tablets, have made it more accessible than ever (OECD, 2016). Internet users are also developing increasingly sophisticated online behaviours, prompted by rapidly diversifying social media platforms\(^1\) that now give users access to a whole host of services, in some cases through one application alone (Sharples et al., 2016).

Given its widespread availability, social media has also begun to impact students, giving rise to new learning styles that allow young people to have more agency over their own learning (OECD, 2017). In its 2015 investigation of the social media phenomenon’s impact on students’ lives, the OECD Programme for International Student Assessment (PISA) found that across OECD countries, 88% of students agreed that “the internet is a great resource for obtaining information,” while 84% affirmed that “it is very useful to have social networks on the internet” (OECD, 2017).

Student perceptions of the internet and social media as sources of information arise from the ease with which they allow information to be found and shared. Finding information no longer requires searching through books or magazines, or watching the nightly news. Although this can lead to a greater number of students being more informed about a wide range of topics (Bennett, Wells and Rank, 2009), the truth of the information found online is not always verifiable, and it can be difficult to sort fact from fiction (Krasodomski-Jones, 2016). In addition, researchers have found that the internet and social media have created spaces for intolerant groups to form and spread misinformation, and there is a tendency for social media users to create networks of like-minded individuals, leading to echo chambers that limit critical thinking and examination of evidence (Bennett, Wells, and Rank, 2009; Krasodomski-Jones, 2016).

Social media as a useful learning tool?

Undeniably, social media has become a key tool of the 21\(^{st}\) Century. Hence, although the majority of students today will learn how to use it in informal settings, its place in the digital literacy curriculum cannot be denied. On the other hand, it is also important to consider whether social media can be inherently useful as a resource in schools, both in helping teachers teach more effectively and in enabling students to achieve formal educational goals. After all, education-based social networking can better position students to connect formal and informal learning and give them the opportunity to adapt social media to their lifelong learning kit. However, as Sharples et al. (2016) write about its use in the classroom, “Anyone can engage at any time, anyone can leave at any time, but skilled facilitators can keep people engaged and actively contributing.” Thus, when educators use social media as a learning tool, the methods used for doing so necessarily differ from those used in traditional teaching (Sharples et al., 2016). Even so, what

\(^1\) Social media platforms (sometimes also referred to as “Web 2.0”) refer to applications for blogging, podcasting, and collaborative content (e.g., Wikipedia and WordPress), social networking (e.g., Twitter, Facebook and WhatsApp), multimedia sharing (e.g., YouTube, Snapchat and Instagram), social tagging (e.g., Pinterest), and social gaming (e.g., World of Warcraft) (Redecker, Ala-Mutka and Punie, 2010).
impact can social media use have on learning? How can we increase the positivity of that impact as we look to the future?

What is the evidence?

Despite a wealth of literature exploring the widespread use of social media by today’s students, there is a lack of evidence regarding its impact on learning. This is partially attributed to its ever-changing nature, as well as to differences in its usefulness depending on age group, gender, and other variables (Aydin, 2012). Yet, the belief that social media must be capitalised on continues to prevail, with supporters of education-based social networking citing its many compelling benefits. For example, social media can increase student engagement by integrating students’ favoured learning styles into instruction, thus enabling what is referred to as the “Knowledge Building” teaching approach (see Box 1 below) (van den Broek, 2012). Additionally, social media can help create a collaborative atmosphere that boosts interactions, and which allows teachers to quickly identify students’ learning needs and deliver immediate feedback (Blazer, 2012). Some studies indicate that use of smartphones and social media for educational purposes in school could increase students’ academic engagement (Brooks-Young, 2010; OECD, 2015). However, studies have yet to find concrete proof of these trends.

On the other hand, there is abundant data confirming the growing prevalence of the internet – and by extension, social media – in students’ lives. From 2006 to 2015, student access to the internet at home became almost universal in PISA-participating countries and economies, with 95% of students across OECD countries reporting having internet connections at home in 2015 (OECD, 2017). In 2010, a survey conducted by Microsoft Corporation found that, on average, children have their first social media account by the age of 13, while a study by Fodeman and Monroe (2011) revealed increases across the board in the percentage of students in grades 4 through 8 using Facebook between 2008 and 2011 (Blazer, 2012).

In the most recent version of the PISA Information and Communication Technologies student questionnaire, indicators concerning social media were added to respond to the increasing interest about its place in educational spaces. Figure 1 below shows the degree to which students enjoy exchanging information online with their friends to solve problems.

![Figure 1: Percentage of students who like to exchange solutions to problems with digital devices with others on the internet](image)
Across the OECD systems that took part in this questionnaire, 48% of students stated that they used the internet to find solutions to problems. With the exception of Portugal (69% of students), the systems that showed the greatest proportion of students were all non-OECD countries: Thailand (74%), Dominican Republic (71%), and Uruguay (66%). These data show the broad potential of incorporating student interests (i.e. solving problems through digital devices) into the classroom.
Possible drawbacks of using social media as a learning tool
Yet, despite its popularity and penetration, social networking has been met with resistance in some educational spheres, due to concerns that students may be exposed to inappropriate or dangerous content, and undesirable adult interactions (Blazer, 2012). There is also a general consensus that social media may pose certain risks and potential harm to students’ emotional and mental health (Frith, 2017). Research has connected excessive internet use with depression, and social media use in particular has been found to have wide-ranging potential negative side effects, such as hyperactivity, aggression, antisocial behaviour, or social isolation, not to mention that students can be subjected to psychologically scarring bullying online (known as cyberbullying) (Frith, 2017). Extreme internet use (over six hours a day) has also been shown to have a negative relationship with students’ life satisfaction (OECD, 2017).

The potential of social media in tomorrow’s classrooms
Social networking for educational purposes clearly has the potential to yield widespread benefits, such as fostering cooperative learning, enabling formative real-time assessment, and facilitating knowledge building and digital literacy in 21st Century students (OECD, 2015). Furthermore, given the large amount of information spread through social media today, it is important for students to be equipped with the skills to think critically about such material and to be able to sift between fact and fiction (Siddique, 2017). Although some social networking sites, like Facebook, are taking steps to limit the spread of false information, unverified information is still present in all parts of the internet, and students must be prepared for this unfortunate reality. As Bennett, Wells and Rank (2009) point out, the best course of

Box 1. Social media for Knowledge Building
Knowledge Building refers to a constructivist teaching approach, in which education is restructured to meet the goals and processes of knowledge generation. While their specific achievements may vary, children and adults often follow similar processes for knowledge building, and learners of all ages are considered active contributors who share a collective responsibility for the expansion of knowledge (van den Broek, 2012). Students are not only learners and inquirers, but also members of a knowledge-building community that collaborates to expand the frontiers of knowledge and generate innovative ideas.

One example of Knowledge Building through social media can be found in a study by Palaigeorgiou and Grammatikopoulou, which looked at innovative Greek educators who had incorporated extensive social media experience into their classrooms (2016). The teachers utilized a variety of social media tools, such as an online video blog that primary school students used to practice their English and communicate with peers within and outside of the country, and “wikis” for collaborative document writing. The study found that students were more academically engaged and confident in their creativity and self-expression, and felt empowered by their newly found role as knowledge producers, and by their ability to generate digital content (Palaigeorgiou and Grammatikopoulou, 2016). This example shows the power of social media to 1) enhance students’ digital literacy, and; 2) motivate learning and collective knowledge creation.
action is to reform how we educate students, so that they are more prepared for citizenship in a digital world. Including social media and digital literacy in the curriculum is a crucial part of the needed reforms.

At this point, however, many of the real effects of social media on learning remain unknown, and there are considerable risks that must be managed before we can definitively determine how social media can be used for learning. In the meantime, it is useful to gain support from educators to begin scaffolding for future adaptations of social media to teaching practices (Aydin, 2012). From helping teachers develop strategies that make use of students’ networking behaviours to improve their learning and development, to training them on how best to use the technology, there is a lot that can be done while both research and awareness continue to unfold.

Guiding questions for discussion
- What trends have you observed in the use of social media in education, and when do you feel its usage is appropriate or most beneficial? Are there certain platforms (e.g., Facebook, Twitter or YouTube) that you feel are more useful than others? If so, why?
- Is there an ideal effect or outcome we want to see from social networking for educational purposes? For example, what additional skills may it provide students with, compared to more traditional learning methods?
- How do we strike the right balance between promoting the many uses of social media, and emphasizing the embedded dangers (e.g., fake news, cyberbullying, etc.)?
- What are the potential drawbacks of the use of social media in learning, and how can these be prevented? What issues remain unresolved?
- If you were minister for a day, what would your priorities be in setting up a digital literacy curriculum? Would social media skills be part of it? What would be some effective ways to incorporate it?

For further reading


Tomorrow’s teaching: Balancing knowledge- and competency-based learning

Why is this topic important?
The body of knowledge being produced is expanding exponentially. Even the speed with which knowledge grows, is increasing. Indeed, each day new knowledge frontiers are discovered and explored. This quantitative expansion of knowledge has made it impossible for any human being to master the entire knowledge universe. Therefore, encyclopaedic mastery of knowledge no longer can or should serve as education’s purpose. What students learn in school is merely an exemplary sample of knowledge, which allows them to effectively navigate in a world where most jobs and industries are knowledge-driven. Now, what you know is not as important as what you can do with your knowledge, and how effectively you can navigate the vast knowledge resources, in order to find what you need.

Yet, it is difficult to find a more passionate debate in the educational community than the question of whether we should educate future generations with an emphasis on transmitting knowledge, or with a focus on developing competencies. Education has traditionally relied primarily on the transmission of knowledge, most often disciplinary knowledge in a limited number of subject fields. Teaching and learning methods were thus oriented towards the memorisation of facts, as the elementary building blocks of knowledge.

Challenges to knowledge-based learning
This perspective has recently come under attack from a number of angles. The reduction of knowledge to facts only, is increasingly seen as outdated. The argument is that it’s not the facts themselves, but understanding them that matters. This has implications for teaching and learning strategies as instead of memorisation, more active engagement which aims for student understanding would be appropriate. The traditional idea of reducing the rich body of knowledge down to a few, established school subjects and disciplines, has also been challenged. While the organisation of knowledge into disciplinary fields and subjects dates back to the late 18th Century, a lot has happened in scientific research (and other fields) since then, putting this categorisation into question. Furthermore, the belief is that new subjects should enter the curriculum which integrate interdisciplinary fields or introduce new areas, such as computer science or robotics.

But the third attack on knowledge-based education is probably the most serious one, as it questions the very concept of knowledge being the goal of education itself. The argument is that learners, and societies as a whole, are not well served by simply accumulating knowledge if they are not able to apply that knowledge and transform it into practical skills, relevant in the workplace and society. Some critics go even further and question the future of knowledge itself, in a world characterised by an explosion of data, with unlimited access to it via the internet. They argue that since “Google knows everything”, students should no longer seek to acquire knowledge, but to develop the skills to navigate it and to identify and apply search strategies and tools. They insist that schools should do more than simply transmit content knowledge; they should develop relevant skills and attitudes. Thus, competency-based education became the new mantra. An additional driving force behind this transformation is the desire to develop so-called
21st Century skills such as problem-solving, communication skills, social and emotional skills, creativity and innovation.

**Challenges to competency-based learning only**

But over the past few years, a counter-movement has increasingly attracted a lot of attention and political support, claiming that the competency-based approach is leading to a generation of culturally-illiterate youth, lacking even the most basic knowledge in essential disciplinary fields. The most vocal representative of this counter-movement is the American scholar E.D. Hirsch, who argues in his 2016 book, *Why Knowledge Matters*, that the overreliance on skills has produced a knowledge deficit and that it is time to reinstate the value of knowledge in education. There are also some less radical approaches that are pushing to revalue the importance of knowledge as well. After all, even with navigation skills, some anchoring knowledge and signposts are still needed in order to find your way. Contemporary approaches seek to balance the quest for knowledge and the desire for skills in a more intelligent way.

**What is the evidence?**

The debate over knowledge versus competencies is based on both ideological grounds as well as on deeply rooted ideas about what education is supposed to be, so evidence alone cannot resolve it completely. Decisions by individual teachers, and policy choices by schools and governments, will have to find a balance. Yet, evidence can help shed more light.

**Students’ integration of both knowledge and competency**

What the OECD’s Programme for International Student Assessment (PISA) results show us, for example, is that knowledge and skills are not opposed to one another, but that they interact in various ways. In general, when PISA tests ‘science literacy’, they examine the proficiency of 15-year-olds in the skills that are required to engage in reasoned discourse about science-related issues. But PISA defines competency in science as being both knowledge of and about science, and attitudes towards science. The PISA 2015 assessment framework for science thus includes knowledge, but it distinguishes between content knowledge, procedural knowledge and an understanding of the rationale for that knowledge (referred to as epistemic knowledge). It also identifies attitudes. The interesting thing is that scientific knowledge and attitudes combine to constitute competency. In scientific inquiry, competency is defined as the ability to explain phenomena, evaluate and design questions, and interpret data and evidence. Competencies thus emerge when knowledge and attitudes work together.

Countries, including well-performing countries, differ in the relative strengths of their pupils’ proficiency in content knowledge, procedural knowledge and epistemic knowledge (OECD, 2016). Finland, for example, has higher scores on content knowledge than on procedural and epistemic knowledge, but it still has an excellent overall science proficiency score.

PISA 2015 also asked students about their learning strategies. The data indicate that it would be wrong to equate memorisation (typical for knowledge-oriented learning) with poor learning outcomes, and that it would likewise be incorrect to equate more competency-oriented elaboration strategies (which involve making connections between tasks, prior knowledge and real-life experience) with better learning outcomes. Indeed, results from PISA show that both memorisation and elaboration strategies can lead to
better learning outcomes for students, even though the latter seems to be essential for solving more advanced tasks (Schleicher, 2016).

Looking forward, the OECD’s Education 2030 project, which is working with countries to explore the competences needed for success in the world of 2030, and is examining the curriculum changes that will be needed to make this happen, further builds on this idea that competencies are in fact an integration of knowledge, skills, and attitudes and values (see Figure 1 below). For students to demonstrate their competencies through action, choice, or way of behaving with respect to the demands in a particular context, they will need to be able to mobilize all dimensions of “knowledge”, “skills” and “attitudes and values”.

**Figure 1. Competency as an integration of knowledge, skills, and attitudes & values**


**Teachers’ integration of knowledge and competency matters, too**

The tension between knowledge and skills is also present in teachers’ professional competences. Much research has been devoted to exploring the impact of teachers and teaching on student achievement. This research shows that teacher quality is an important factor in determining gains in student achievement, even after accounting for prior student learning and family background characteristics. But research also shows that “professional competence” itself is based on the integration of knowledge (both content knowledge and pedagogical knowledge), skills, attitudes and motivation, and the ability to apply all of the above to highly complex and demanding situations. It follows from this conceptualisation of professional
competence that the ability to solve work-related problems requires having not only the cognitive abilities for developing effective solutions (i.e. pedagogical knowledge), but also the right motivation and attitudes.

Knowledge and skills often go hand in hand. This is illustrated by data from the OECD’s Teaching and Learning International Survey (TALIS) on the self-reported need of teachers for professional development (see Figure 2 below). Teachers express a need for professional development for both content knowledge and pedagogical competences in quite similar ways across countries. In most countries, less than 10% of teachers express a need in one but not in the other, while on average, 30% express a need for both at the same time.

Figure 2. Percentage of lower secondary teachers that have a moderate or high self-reported need for professional development on subject knowledge or pedagogical competences (2013)


Note: The data from the United States should be interpreted carefully. This is because the United States did not meet the international standards for participation rates.

While many education systems seem to be currently swinging in the direction of delivering more competency-based instruction, as we move into the future, the pendulum will most likely swing back and forth between these two approaches. Perhaps education systems would do best by integrating both approaches and benefitting from the best aspects of each.
Guiding questions for discussion

- In your experience, what is the optimal balance of knowledge and competence in teaching and learning? Does this balance evolve over the course of the educational path?
- In your view, is it feasible to expect teachers to apply knowledge-oriented teaching strategies and competency-oriented strategies, and to mix them appropriately to meet the diverse demands of learners, subjects and curriculum objectives?
- The most recent findings from TALIS report that beliefs among teachers that learning should be active are strong, yet many teachers still seem to implement more traditional practices in the classroom. What do you feel are the challenges of a blended approach that combines an emphasis on knowledge, skills, and attitudes and values?
- Have you come across teaching approaches that are particularly effective at developing this magic blend? What are the key success factors and the recipe that makes this work?
- If you were minister for a day, is there anything you would try to change as a matter of priority, in the way teaching and learning take place in your country?

For further reading


Technology in the classroom, today and tomorrow

Why is this topic important?
Digital devices and the internet are increasingly becoming a part of the environment in which young people grow and learn. But plans to expand access to technology in individual schools, entire districts or even whole countries will effectively improve student learning only if these tools are put to good use by both teachers and students. How can evidence about how students learn be used to make smarter use of technology in tomorrow’s classrooms? Can technology add meaningful new content and experiences to an already crowded curriculum? As we move into the future, how can technology help transform our use of learning strategies to engage students more effectively?

What is the evidence?
Frequently, evaluations of the implementation of information and communications technology (ICT) plans for schools show that investments in technology do result in greater use of computers, but that positive, quantifiable learning gains are more difficult to identify (Bulman and Fairlie, 2016). While both data from the OECD Programme for International Student Assessment (PISA) and research evidence concur that the positive effects of computer use are often limited to certain outcomes, such as computer skills, it’s important to keep in mind that student learning, whether online or offline, is mostly determined by student engagement and effective teaching techniques (OECD, 2015). The value of technology in the classroom is therefore contingent on how and when computers are used, and not just on whether the technological tools are available to teachers and students.

Technology is most effective when it supports effective learning strategies
Hattie and Yates (2013) explain that the successful use of computer-assisted instruction shares several characteristics with successful non-technologically based learning interventions: it extends study time and practice; it allows students to assume control over the learning situation (e.g., by individualising the pace with which new material is introduced); and it supports collaborative learning. In other words, the science of learning is the same in a technology-rich world as it is in an analogue world. Learning still demands time, and is most effective when it responds to a personal need or goal, and when it can be socially enhanced.

Some digital classroom practices that are currently in the spotlight hold great promise. Teachers who “flip” their classrooms use class time for practice, group work, and individual feedback, while asking students to watch or listen to lesson content at home. In doing so, they extend study time and individualise instruction. In flipped classrooms, technology is used as a means to reinforce effective pedagogical practice, but is not at the centre of the classroom experience, (Bergmann and Sams, 2012). Technology can also bridge space constraints. Virtual science labs enable hands-on experiences that students would otherwise never have. Similarly, technology use in second-language instruction can give students access to native speakers, which may not otherwise be available. And state-of-the-art, non-linear course-ware can provide a personalised experience for learners, enriched by frequent formative feedback loops.
Equity of access is not universal

While these and other trending practices (Adams Becker et al., 2016) hold great promise, the data show that computer use in schools is still not as widespread as it could be in many countries, including some high-income countries as well as those that top international education rankings. In 2015, 55% of students in Estonia, 52% of students in Korea, 48% of students in Japan, 46% of students in Poland, and 40% of students in Beijing-Shanghai-Jiangsu-Guangdong (China) reported that they used a desktop, laptop or tablet computer at school. And, in several countries, the prevalence of computer usage in schools actually decreased between 2012 and 2015.

Technology use is on the rise, but it does not automatically translate into more innovative classroom use

Another key challenge for the future is that, according to PISA data (Figure 1), the most frequent uses of technology in the classroom today tend to emulate (and sometimes even displace) more traditional activities that could take place without digital devices. Browsing the internet for schoolwork (48% of students across OECD countries reported doing this at least once a week), and chatting online at school (the most rapidly growing activity, compared to 2012, with a 24 percentage-point increase, on average, across OECD countries) are tasks that could otherwise be accomplished without access to technology, through more traditional research and discussion. Meanwhile, doing simulations on computers at school at least once a week, a technology-specific activity, was reported by an average of just 15% of students.

![Fig. 1 - Change in use of digital devices at school between 2012 and 2015, by type of activity](image-url)

PISA data further show that teachers’ use of digital devices is related to the demands of the curriculum, but also to their own attitudes. In mathematics, teachers who ask students to work on real-world problems use computers most. But pedagogic knowledge and diversification of instruction also matter a lot. Teachers who are most inclined towards, and better prepared for, student-oriented practices such as group work, individualised learning, and project work, are more likely to use digital resources (OECD, 2015). Indeed, while educators’ technology use does seem to be restricted, to some extent, by the pressures of...
demanding curricula and high-stakes examinations, technology use seems to be primarily driven by teachers’ own pedagogical preferences and knowledge (Hennessy and London, 2013).

In order for technology to have an even more positive impact on learning strategies in classrooms of the future, we may need to look at the ways it can enhance student motivation while, at the same time, how it can be designed and introduced so that teachers not only have buy-in, but that they feel the technology actually helps them build on their pedagogical expertise. While simply using a computer or a smartphone to find the answer to a factual question is unlikely to make students smarter, technology does have the capacity to amplify great teaching.

**Guiding questions for discussion**

- Is the use of technology in your lessons always justified by an educational goal?
- Technology is redefining what it means to be “literate” for 21st Century students. Reading becomes “information literacy” or solving information problems using textual cues. In the subjects you teach, is technology redefining what is important for students to know and be able to do? How is this reflected in your teaching?
- What are some examples of how you have altered lesson plans to use technology in your classroom? Did you find ways to enhance your lessons by doing so? What kind of a challenge did this pose?
- If you were minister for a day, what policies would you put in place to better support teachers in their efforts to improve technology use in classrooms?

**For further reading**


Gamifying teaching: What works?

Why is this topic important?
Teachers in many countries struggle to promote student engagement and motivation, a particular challenge with teenagers (OECD, 2013). Boys, especially those who attend schools in socio-economically disadvantaged neighbourhoods where educational and career aspirations are low, tend to adopt a concept of masculinity that includes a disregard for authority, academic work and formal achievement. Indeed, as Salisbury et al. (1999) found, boys’ motivation at school dissipates as they get older and by age 11, 40% of boys belong to one of three groups: the “disaffected”, the “disappointed” or the “disappeared”. Finding ways to promote and sustain student motivation and engagement in school, particularly with boys, is thus increasingly becoming a priority for teachers, parents and educators. The fast-paced and highly engaging nature of teenagers’ leisure activities often sharply contrasts with traditional classroom dynamics and teaching practices. This further contributes to declining levels of engagement. At the same time, teachers are seeking new ways to ensure that students have the knowledge and skills they need to succeed in the 21st Century. Introducing play and games into classrooms, and revising teaching so that it includes elements of both, has the potential to improve student engagement and motivation, while helping equip students with new skills. Under what conditions do game-based teaching and learning work? What are the desired outcomes of game-based learning? Can game-based learning prepare students for tomorrow’s challenges?

What is the evidence?
Evidence from the Programme for International Student Assessment (PISA) suggests that boys (who are consistently some of the students hardest to engage at age 15) are frequent video-game players. Across OECD countries (see chart below), as many as 75% of boys play one-player games regularly and over 13% do so every day. Similarly, as many as 71% of boys in OECD countries play collaborative online games regularly, while 20% play every day. By contrast 56% of girls report never or hardly ever playing one-player games and 71% never or hardly ever play collaborative online games (OECD, 2015).

| How often do girls and boys play video games on the computer, outside of school? |
|---------------------------------|-------------------|-------------------|-------------------|
| Percentage of students, OECD countries |
| Never or hardly ever play | Play, but not every day | Play every day |
| One-player games |
| Boys | 13.4% | 25.4% | 61.2% |
| Girls | 26.8% | 41.3% | 31.9% |
| Collaborative online games |
| Boys | 19.6% | 29.4% | 51.0% |
| Girls | 27.0% | 27.2% | 45.8% |
The fact that video games are a favourite leisure-time activity among teenagers worldwide causes some concern among parents and educators. The addictive nature of leisure time gaming, coupled with the potentially negative consequences playing video games can have on academic performance (Borgonovi, 2016), add to this feeling. Students who excessively play video games may pay less attention in school, be less willing to allocate time and effort to home-study, and may become less motivated in school, especially without the constant external reward mechanisms that are artificially deployed in gaming (Swing et al., 2010).

**Moderation is the key**

Studies suggest that while excessive gaming may lead to negative outcomes, moderate gaming may yield positive effects. In fact, many games incorporate positive learning principles that can stimulate students' cognitive functioning, psychosocial adjustment, and promote problem solving and spatial skills (Adachi and Willoughby, 2013; Connolly et al., 2012; Spence and Feng, 2010). Rather than demonising gaming, educators are increasingly exploring how to use play and games to engage students and promote learning.

**Playing games in classroom settings:**

- **Serious games**
  Individuals play actual games that were specifically conceived and created for educational purposes. Engaging in such games occurs in non-recreational, educational environments (e.g., flight simulators for pilots). Game practice is, in these contexts, central to individuals’ acquiring skills and competencies that otherwise would be difficult or impossible to acquire in real, learning-by-doing, practice settings.

- **Digital games or game-based learning**
  Using video- or analogue games in the classroom for educational purposes (e.g., using Sim City to understand the complexities of how cities work) (de Sousa Borges et al., 2014). Playing games can help teachers convey knowledge and competencies that had been traditionally acquired in other ways, and promotes motivation and engagement.

**Using games presents challenges**

The direct use of both traditional and video games is a well-established practice in education. That said, and despite the fact that several meta-analyses have described the overall positive effects of using games to promote student learning (e.g., Clark et al., 2016), the literature also points to challenges in scaling the use of video games for regular classroom instruction. Of particular concern is whether teachers are able to fully integrate games and gamified experiences into the instructional context (Lafuente, forthcoming).

**Ways to add features or principles of gaming into teaching:**

- **Playful design**
  Adoption of basic features and principles and using game-based aesthetics and limited game-dynamics in non-game contexts (e.g., a normal maths program that uses a well-designed, playful interface to log in, to show results, or to ask questions). Playful design is used to promote engagement and motivation.
Gamified teaching

Using elements from games that make mainstream teaching more appealing and effective. Gamified teaching can promote engagement, motivation and competency acquisition. For example, adopting storytelling techniques, such as immersing the learner in a story with a plot, characters and challenges that make the story flourish, can mimic one of the main sources of motivation and engagement in video games.

According to literature reviews by Hamari, Koivisto and Sarsa (2014), and Buckley and Doyle (2016), gamified teaching is generally associated with better engagement and motivation. However, most studies cannot infer the direct effect of gamification per se, but instead suggest a positive correlation between the use of gamified teaching and motivation for the particular subjects and contexts in which gamified teaching was employed.

Pedagogical components to address

Gamifying teaching works best when it addresses several key pedagogical components that have been identified by the Institute of Play1 including: rapid feedback, revolving around immediate and ongoing student progress information; participation, which lets everyone engage according to their skills and acknowledges failure as a part of the learning process; badges and goals, relating learning to specific skills and content; progressive challenges, which make learners feel neither too relaxed nor too anxious; and collaboration which involves a degree of competition, so that the learning environment fosters a level of cooperation and teamwork (Flatt, 2016).

Building on the work of Tulloch (2014), gamification should be understood as a way to implement innovative pedagogical approaches such as formative assessment, experiential learning, adaptive teaching, narrative pedagogies and collaborative learning, while focusing on the meaningful participation of all students. From this perspective, gamified teaching is not just an end in and of itself; but rather, it should be used to aid the implementation of active, student-centred, collaborative learning. As we move forward into tomorrow’s classrooms, gamification can help increase student engagement and thus stimulate even better student outcomes.

Guiding questions for discussion

- Video games are appealing to many teenagers (particularly boys) because they contain non-standard educational elements, such as extreme and expressed competition, and violence. Is it acceptable to shift boundaries and educational ideology to potentially better engage students?
- Transitioning from traditional activities to gamified experiences can potentially be difficult and frustrating for teachers, and can lead to a variety of reactions and attitudes among students. How can we better guarantee a smooth transition?

1 The Institute of Play is a non-profit design studio that creates learning experiences and environments based on the principles of game design. It is currently one the pioneers of innovation and implementation in transforming education through play.
Not all skills and content are equally easy to ‘gamify’ and there are some core skills, such as reading, that students need to be proficient in to make the most of gaming experiences. How do we maintain a good balance between dynamic, gamified activities, and the core skills students must master?

Gamification can push us to re-think our use of technology in the classroom and the whole school. If you were minister for a day, what steps would you take to support teachers in their quest to increase engagement through gamification? How would you better support teachers in their use of technology to do so?

For further reading


Lafuente, M. (forthcoming), Chapter in IPPL report part II.


Tackling in-person and online bullying in tomorrow’s schools

Why is this topic important?
Bullying is a systematic abuse of power, and can be identified by three key traits: repetition, intention to harm, and unequal power between the bully and the victim. It can take many forms, from physical aggression and name-calling or mocking, to social exclusion, public humiliation and shaming. Bullying happens both in real and in virtual environments (cyber-bullying), and usually together (Salmivalli, Sainio and Hodges 2013).

Data from the 2015 edition of the OECD Programme for International Student Assessment (PISA) show that bullying of students is widespread. On average, across OECD countries, around 11% of 15-year-old students report that they are frequently (at least a few times per month) made fun of, 8% report that they are frequently the object of nasty rumours, and 7% report that they are frequently left out of social activities. As for physical bullying, across OECD countries, an average of about 4% of students report that they are hit or pushed by other students at least a few times per month. Similar proportions of students report that they are threatened, or that their belongings are destroyed or stolen by other students. On average, across OECD countries, about one in five students is frequently the victim of at least one of these acts of bullying. In the United Arab Emirates, the number is more than one in four. What short- and long-term effects does bullying have on students, both academically and emotionally? Are there certain conditions present within some schools that make for a more target-rich environment for would-be bullies? With various forms of cyber-bullying on the rise, what can school communities do to stem the rising tide of harm that bullying brings?

Figure 1. Percentage of students who reported being bullied at least a few times per month, or at least a few times per year (OECD average)

What is the evidence?

The consequences of bullying
Bullying at school has long-lasting consequences for both the bully and the victim and should therefore never be considered a normal part of childhood, but a serious education and public health problem. Adolescents engaged in bullying as perpetrators, victims, or both, are more likely to skip classes, drop out of school, and perform worse academically than schoolmates who have no conflictual relationships with their peers (OECD, 2017; Konishi et al., 2010). Emotional and behavioural problems suffered by both victims and bullies may continue into adulthood, leading to long-term negative outcomes, including less participation in the labour force (Drydakis, 2014). A Norwegian study found that former school bullies were four times more likely than non-bullies to commit a relatively serious crime later in life (Olweus, 1993), while a similar UK study found that bullying at age 14 was a good predictor of later life outcomes, including self-reported violence in the teens, violent convictions before the age of 20, and drug use by the age of 30 (Ttofi, Farrington and Lösel, 2012).

Adolescents who bully or are bullied are more likely to show symptoms of depression and anxiety, have low self-esteem, feel lonely, change their eating patterns, and lose interest in activities (Kochel et al., 2012).

School-level factors related to bullying
Schools with a low incidence of bullying tend to have more students who are aware of school rules, believe that the rules are fair, and have positive relationships with their teachers. When students work in a structured, orderly environment, they feel more secure and engage more with school work. They are therefore less inclined to participate in high-risk behaviours. Indeed, analysis based on PISA data show that across OECD countries, the proportion of frequently bullied students is larger in schools with a poor disciplinary climate than in schools with a good disciplinary climate (OECD, 2017).

Bullying is also less frequent in schools where students perceive their teachers as effective in communicating norms of respectful behaviour. PISA data show that students who attend schools where perceptions of teacher fairness are more pervasive are less likely to be frequently bullied than students in schools where teachers are perceived as less fair. Perceiving teachers as unfair may lead some students to believe that they have the right to bully as a way of exercising power, or as a way to recover from humiliation. It is therefore imperative that teachers clearly communicate to students that no form of bullying will be tolerated, and that teachers act as behavioural role models in the classroom.
Six strategies to reduce bullying

1. **Empower teachers**
   While teachers are on the front lines of implementing anti-bullying strategies, many are not aware of the severity of bullying in their schools, or of the many forms bullying can take. Many teachers are also not properly prepared to intervene to prevent bullying. Targeted training for school personnel can improve their understanding, intervention skills and effectiveness in working with students to prevent bullying. Teachers and school personnel should also be trained to identify and address the various forms of cyber-bullying in addition to traditional face-to-face bullying.

2. **Empower parents**
   Parents are not always aware that their child is bullying others, or that they are a victim of bullying. An open line of communication with teachers and school staff can help parents be more aware of problems and take action. Prevention programmes can also help parents provide stable emotional support for their children – including listening, and offering praise, affection, trust and respect.

3. **Empower students**
   The behaviour of onlookers matters. Changing how onlookers behave can reduce the rewards gained by bullies and, consequently, their motivation to bully in the first place. Peer mediation and peer mentoring activities are among the most complex elements of anti-bullying programmes and, while more research and experimentation is needed to improve their effectiveness (Farrington and Ttofi, 2009), there have been some short-term successes (van der Ploeg, Steglich and Veenstra, 2016). While victims of bullying don’t need to be made less vulnerable, they do need to feel that they are heard and helped by the adults at school.

   Fighting cyber-bullying requires specific educational resources to teach students how to use the internet in a healthy, safe and responsible way. Schools should also provide access to in-school counselling for students involved in cyber-related incidents.

4. **Use multi-tiered approaches**
   Prevention strategies should follow multi-tiered approaches. At the universal level, prevention programmes address such factors as social skills development and social–emotional learning or self-regulation. These approaches reduce both the chance that students would engage in bullying themselves and their risk of being bullied further. Targeted preventive interventions incorporate more intensive support and treatment activities, directed either to students who are at risk for engaging in bullying, or to students at risk of being a bully’s target. Evidence shows that using both universal and targeted programmes is more effective than suspension or other exclusionary techniques which may actually result in increased academic and behavioural problems for bullies (Rivara and Le Menestrel, 2016).

5. **Use whole-school strategies**
   Curbing bullying requires a whole-school approach where staff, students and parents work together to address the social environment and a broader culture of bullying. Whole-of-school prevention and intervention strategies make everyone responsible for supporting victims, and for communicating with
bullies. Several anti-bullying programmes, such as the KiVa initiative in Finland or the School Learning Environment Plan in the Spanish province of Castilla y Leon, have effectively countered bullying through multiple interventions, establishing a common set of expectations for positive behaviour. Schools should also develop incident-response plans for staff in the event of cyberbullying, and introduce a “digital safety” theme across school policies and practices.

6. Monitor the incidence of both in-person and online bullying
Collecting data on bullying via anonymous student surveys can inform the supervision and intervention process, and identify potential areas for intensive training of school staff. Data collection can also help schools keep an eye on new forms of bullying and on upward trends.

Guiding questions for discussion
- Have you witnessed incidents of bullying in your classroom or on school grounds? If so, what did you do?
- What successful techniques have you employed to prevent or combat bullying?
- Do you feel there are differences between the types of bullying that occur in primary schools and the types of bullying that occur in secondary schools? Is it possible to use the same techniques to curb them, or are different techniques required?
- Online bullying, frequently known as cyber-bullying, is on the rise. If you were minister for a day, what steps would you take to help teachers and schools combat this type of bullying?

For further reading


Rivara, F. and S; Le Menestrel (eds.) (2016), Preventing Bullying Through Science, Policy, and Practice, National Academies Press, Washington, D.C.
