Nurturing student creativity to promote independent, employable learners

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# Table of Contents

Abbreviations and Glossary ............................................................................................................. 1

Executive summary.......................................................................................................................... 2

1. Project overview ......................................................................................................................... 4
   1.1 Aims and objectives ............................................................................................................... 5
   1.2. Why Finland? .................................................................................................................... 5
   1.3. Why Denmark? .................................................................................................................. 6

2. Key Findings ............................................................................................................................... 7
   2.1 Regular curriculum reviews forge links between school education and modern society. .... 7
   2.2 The new Finnish curriculum (2016) ................................................................................... 8

2.3 Phenomenon-based learning and project-based learning ....................................................... 9

2.4. A culture of trust .................................................................................................................... 11

2.5 Innovative use of technology .................................................................................................. 12

2.6 Authentic learning contexts create meaningful learning ....................................................... 12

2.7 School-free pedagogy motivates learners .............................................................................. 13

2.8 Inventive use of school architecture enables creative learning and teaching ....................... 13

3. Case studies: Nurturing creativity and transferable skills ...................................................... 14
   3.1. Phenomenon-based learning, Tampere, Finland ................................................................. 14
   3.1.1 How was the PBL project organised? .............................................................................. 14
   3.1.2. How are the groups organised? ...................................................................................... 14
   3.1.3. How are students monitored or assessed in PBL? ......................................................... 14
   3.1.4. Teacher feedback .......................................................................................................... 16
   3.1.5. How successful is this teaching and learning method? .................................................. 16
   3.1.6. What are the disadvantages of this learning style? ......................................................... 17

3.2 Authentic learning contexts, Finland ...................................................................................... 18

3.3 Entrepreneurship, Helsinki ..................................................................................................... 19

3.4 Learning through play, Finnish kindergartens ...................................................................... 20

3.5 Open-architecture teaching and learning, Hellerup Skole, Copenhagen ............................ 20
   3.5.1 The school’s vision ......................................................................................................... 20
   3.5.2. How is the space organised? ......................................................................................... 20
   3.5.3. What impact does the building’s open-architecture have on teaching and learning? ... 22
   3.5.4. How is the timetable organised? ................................................................................... 23
   3.5.5 What does project week entail? ..................................................................................... 23
   3.5.6. What are the advantages of teaching and learning at Hellerup Skole? ......................... 23
   3.5.7. What are the disadvantages of teaching and learning at Hellerup Skole? ..................... 24

4. Features of successful programmes ......................................................................................... 24

5. Implementation ideas for teachers and curriculum leaders in schools ............................ 25

6. Conclusions ............................................................................................................................... 25

7. Recommendations .................................................................................................................... 26
Abbreviations and Glossary

**CPD** refers to Continuing Professional Development. CPD sessions are compulsory for teaching staff and content may include pedagogical developments, teaching and learning ideas, updates on child-safeguarding protocol, first aid courses etc.

**KS1** refers to Key Stage 1 education, school years 1 to 2, when children are aged between 5 and 7 years.  
**KS2** refers to Key Stage 2 education, school years 4 to 6, when children are aged between 7 and 11 years.  
**KS3** refers to Key Stage 3 education, school years 7 to 9, when children are aged between 11 and 14 years.  
**KS4** refers to Key Stage 4 education, school years 10 to 11, when students are aged between 14 and 16 years.  
**KS5** refers to Key Stage 5 education, school years 12 to 13, when students are aged between 16 and 18 years.

“**Open architecture**” lesson design refers to a learning structure which affords students and teachers a sense of security and direction, but provides substantial flexibility and choice, space for initiative, and self-directed learning.\(^1\) It seeks to rebalance structure and flexibility in teaching and learning; to “distinguish on the one hand tightly regulated structures such as the ‘four-part lesson’, and on the other, from some earlier forms of ‘progressive’ or ‘child-centred’ learning which were often lacking in structure and highly-individualised” (Wrigley 2007, p. 167).\(^2\)

**Phenomenon-Based Learning** is a cross-curricular, problem-based learning method based in real life topics, ideas and issues (or phenomena). This pedagogy recognises that school is preparing students for jobs that do not currently exist; for using technologies that haven’t been invented; for solving problems that we don’t yet know are problems. In so doing, PBL shifts emphasis from “what students learn” to “how students learn”. Phenomenon-Based Learning will be abbreviated to PBL.

“**School-free” pedagogy** in this report refers to the practice of how teachers should teach and learners should learn in school as if it were not school. It prioritises the needs and abilities of the individual learner, conceals the mass-character of school and seeks to base learning in exploration, rather that more traditional didactic methods where the teaching content is preconceived by the teacher whose aim is to instill it into the mind of the student.

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\(^1\) For further reading, see https://mitpress.mit.edu/sites/default/files/9780262515016_Open_Access_Edition.pdf  
Executive summary

Scope of the report
The author spent 3 weeks in Finland and 2 weeks in Denmark visiting kindergartens, schools and universities to explore how they implement "school-free" pedagogy and “open-architecture” lesson design respectively. The focus of the report is on the impact of these pedagogies on teaching and learning, student independence and creativity.

Methods used
- Interviews with teaching staff
- Teacher survey
- Interviews with students
- Lesson observations
- School tours
- University visits
- Student-teacher questionnaire

Major findings
- Phenomenon-based learning and project-based learning
  These methods of teaching and learning demand students work independently, thereby developing student autonomy and numerous transferable skills regularly called upon by employers, including:
  - research skills (literacy & ICT skills)
  - project planning
  - time-management
  - teamwork
  - project-development
  - information assimilation
  - ICT literacy
  - presentation skills (oral and written literacy)
  - communication skills (oral literacy)

- Successful PBL programmes are embedded in the curriculum.
  Successful PBL programmes are embedded in the schools’ curriculum. Teaching and timetabling is flexible to maintain the impact on specific subject learning. PBL takes place regularly, often monthly, is well planned by staff, including how feedback to students and parents will take place, but affords students maximum creative freedom. Feedback is highly descriptive, as opposed to grade/level orientated and key skills such as online research and presenting are taught. Teachers are given time to collaborate and often team-teach to account for the cross-curricular nature of these projects and provide the appropriate expertise.

- Regular curriculum reviews forge links between school education and modern society.
  Where education has been rationalized as preparation for an imagined future, not a known future, regular curriculum reviews seek to reflect modern society’s needs by preparing students for an imagined future. Therefore, the focus shifts away from gaining specific knowledge, predetermined by the teacher or curriculum, to developing transferable skills, accessing a range of information, and learning to work independently of adults.
• **A culture of trust enables the success of creative pedagogies**
A culture of mutual trust between students and teachers is integral to the success of pedagogies such as PBL which demand students to work, not only independently, but in groups, which requires their freedom to discuss their project, which can of course be noisy, and to research their project most likely using ICT, which can offer many distractions. Students must be trusted to learn in this non-traditional environment for PBL to succeed. Close and regular contact between school staff and parents/guardians are useful to ensure students develop positive working habits.

• **Developed, creative use of ICT enables student independence and cross-curricular links**
Many schools allowing BYOD (Bring Your Own Device) admit that they are still learning how to manage negative impacts of students using devices in class, however teachers and senior staff are overwhelmingly positive about the independence ICT affords students, the research benefits, and, crucially, the reality of ICT in the modern world: its prevalence is irrefutable so we cannot deny the need for our students’ literacy across numerous computing and ICT skills.

• **Inventive use of school architecture enables creative learning and teaching**
Flexible architecture enables and perpetuates the creativity of both teachers and students. Open spaces populated by easily transported temporary walls, tiered seating, wooden blocks, soft furnishings such as beanbags and stools allow teachers and students to create spaces within spaces as suits their needs. This generates “school-free” spaces, breaks the boundaries of the traditional classroom in which students feel welcome, relaxed and valued and supports student-centred self-directed pedagogies.

• **Focus on learning through play and exploratory learning methods.**
Learning through play generates enjoyment and promotes a cycle of positive learning by motivating students to continue playing and learning and increasing their engagement in school. Both Danish and Finnish pedagogies value and promote play, particularly in lower and middle grades, as integral to student learning and development. In Finland, despite the climate, it is rare for a child under 8 years old to spend less than 2 hours a day outside enjoying free-play. Furthermore, kindergarten teachers are highly trained to initiate and promote play-based activities which promote student learning and cognitive development. The social-emotional developments of play-based learning are also prized here and believed to directly impact the child’s ability to learn literacy and numeracy skills in later years.
1. Project overview

Lauren Grunwell is a secondary school English teacher, who has taught English Language and Literature to Key Stages 3, 4 and 5 in large comprehensive schools in Leeds, UK.

As a secondary school classroom teacher, I have become increasingly frustrated by the impact of UK exam culture on students and teachers alike. For students, the purpose of learning in this educational model can be reduced to passing a test, thus denigrating the value of the learning in and of itself. From a more holistic viewpoint, teachers regularly witness the damaging impact of exam culture on students’ self-worth and self-confidence. Whilst those suited to academia in the traditional sense might excel in this system, many students suffer from exam-induced stress; they might feel defined by their academic results, struggle to manage the workload and, ultimately, disengage with an impersonal school culture which consistently puts them under pressure via testing to quantify their abilities against a national standard.

For teachers, exam culture has a huge impact on teaching styles and priorities. Curriculum cramming and exam practice drills have, in some schools, led to the decision to start teaching the exam syllabus a year before it is supposed to commence, meaning opportunities for other types of teaching and learning are missed. Ensuring students understand the marking scheme and assessment objectives for each exam to gain the most marks is common practice but this time dedicated to teaching exam technique serves no purpose whatsoever beyond the exam hall. These skills can not be applied to real life and are entirely uninspiring both to teach and to learn.

Working in this environment, I, like many teachers, have found myself questioning my role in this system, its impact on my teaching, on my interactions with students and, even, my willingness to stay in mainstream UK education. Most importantly, it has led me to question the aims and priorities of the UK education system: is it fit for purpose in our twenty-first century society? What is the purpose of an exam? Does our exam culture improve teachers’ ability to educate? Does it inspire and improve student learning? Is it a political tool: has education become a yardstick against which successive governments are measured and how does this impact education policy? Most importantly, how is this conducive to an education system where students’ needs are at the heart of decision-making at both a government and school-level?

Fundamentally, I have found myself questioning how exam culture helps prepare children for adult life. This led me to consider alternative educational structures without the pressure to teach prescribed material as isolated subjects, often removed from “real” contexts and focusing intensely on teaching-to-the-test. I was inspired to pursue my research in Finland and Denmark to investigate alternative pedagogies, which explore connections between the traditional subjects, particularly for secondary school students who rarely have the opportunity to do so.

Cross-curricular and project-based learning can easily fall by the wayside in UK secondary schools where senior leadership teams and teachers are under pressure to produce test results that achieve or exceed national standards and national league tables rank one school against the next. Increasingly, this has led schools to focus intensely on the teaching of “core” subjects essential to ranking highly in the league tables, notably English and Maths. Worryingly, and partially due to recent government cuts to school funding, some schools have even gone so far as to narrow the curriculum by removing creative subjects to make room on the timetable for more core curriculum teaching, again, to focus on English and Maths. Regrettably, this often entails struggling students participating in more of the same, certainly in terms of subject-content as the nature of quantitative national testing demands a finite curriculum, and habitually in terms of teaching and learning styles.
Unfortunately, the move away from creative subjects encourages the traditional stratification of the subjects and itemisation of knowledge, which restricts the potential for exploratory teaching and learning methods and can make subject content less relatable for students. This has a demotivating effect whereby students feel that the learning is too far removed from their lives, becoming less meaningful, possibly seeming irrelevant. It is not unrealistic to suggest that increased participation in well-planned cross-curricular exploratory learning projects would provide students with ownership of their learning, create opportunities for independent learning and therefore motivate students to participate. Furthermore, opportunities for students to practise core literacy, numeracy and ICT skills would emerge as a matter of course without needing to be explicitly named.

The National Curriculum for England in Science states, “The social and economic implications of science [...] are taught most appropriately within the wider school curriculum: teachers will wish to use different contexts to maximise their pupils’ engagement with and motivation to study science.” This is an explicit reference to the need to ground teaching and learning in relatable and meaningful contexts, however “the wider school curriculum” reference here is difficult to source in many UK schools. Where does an overarching “wider school curriculum” appear on a timetable itemised subject by subject?

The culture of league tables and teaching-to-the-test makes regular variation of learning contexts and subject integration through cross-curricular learning or student-led projects unlikely to be pursued in many schools. Likewise, the time-consuming nature of planning and financing lessons in authentic contexts, such as via regular trips, outdoor learning and going into the wider community, makes such pursuits unlikely to be integrated into the day-to-day life of many schools. This restricts teachers’ ability to make learning relevant, relatable and meaningful and reduces the ability to motivate their students.

I would like to acknowledge at this point that there is plenty of excellent teaching and learning to be found in UK classrooms; it is opportunities for variation in learning contexts and cross-curricular learning that can be lacking. Unfortunately, this is perpetuated by government pressure on teachers to teach prescribed curricula “to-the-test” and through reduced government funding to schools and education.

### 1.1 Aims and objectives

The aim of my travels was to find specific examples of “school-free” pedagogy and “open-architecture” lesson design in practice in the classroom in Finland and Denmark respectively, in hope of finding inspiring classroom practice to benefit teachers and educational institutions in the UK. I aimed to achieve this by observing lessons, interviewing teachers and students, and visiting teacher training schools to better understand how teachers develop and employ pedagogies that instill values of innovation, open-mindedness and flexibility. The nature of these pedagogies develops student independence, creative thinking and problem-solving skills, which, in turn foster transferable skills appropriate to a contemporary working environment.

### 1.2. Why Finland?

Finland has established a global reputation as a model educational nation, consistently at the top of OECD international education system rankings and it is, according to the Finnish education minister, built on equality: all schools are “good” schools and there is a specific focus on fostering the particular talents of each

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individual. A recent study by the Smithsonian Institution showed that the difference between Finland’s weakest and strongest students was the smallest in the world despite teaching mixed ability classes and the absence of gifted programmes, selective grammars and private schools.

League tables to compare one school to another simply do not exist and regular teacher observations are not considered necessary. Teachers are trusted to teach as they choose, as long as they do not infringe students’ safety. Teacher observations only exist to share ideas, not to scrutinise teacher performance. This is deemed unnecessary in a system where all teachers are trained to Masters level and considered experts both in their subject-field and as trained educators.

PISA data from the OECD has frequently placed Finland near the top of international educational rankings, placing 6th for reading after Shanghai, Hong Kong, Singapore, Japan and South Korea, where the UK ranked 23rd, and placing 12th in Mathematics, where the UK ranked 26th (PISA results 2012). The mean score in problem-solving performance in Finland is also one of the highest among PISA-participating countries and economies. (523 PISA Score, rank 10/42).

Whilst those ranked highest are the aforementioned Asian countries (notably, China is represented only by the cities, Shanghai and Hong Kong), I considered Finland to share more cultural similarities with the UK, which would make research here more readily relatable to the UK and more easily implemented. Furthermore, I am inspired by Finland’s “school-free” pedagogy and rejection of the traditional classroom experience in favour of one which values the individual students’ needs, abilities and interests as both a teaching and motivational resource.

The Finnish education system values ingenuity, creativity and risk-taking because, as well as knowledge, students need to develop their ability to apply and repurpose knowledge in order to survive in a rapidly changing world. Therefore, teachers need methods of teaching the curriculum that equip children with transferable skills and expertise to make them employable in a world of ever-changing technological advancement.

“School-free” pedagogy supports the aim of Finnish education to facilitate learners, and thereby a workforce, capable of innovation, open-mindedness and creation. Such holistic aims mean that traditional values of teaching facts have been replaced by the development of critical thinking skills, problem-solving and learning how to learn, or, metacognition. I hope to explore how these aims are put into practice in the classroom and translate these teaching methods to a UK setting.

Finally, I was interested to see how Finnish teachers assess and provide students and parents with feedback given the absence of standardised testing until students are 18 years old and sit the national matriculation examinations. This is of particular interest in light of the introduction of assessing without levels prior to KS4 in the UK.

1.3. Why Denmark?
In Denmark, the aim of my research was to explore open-architecture lesson design in practice as this provides such an interesting example of cross-curricular pedagogy given its aim to balance structure (teacher-directed activity) and flexibility (students’ imaginative freedom and intellectual input) in the

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4 http://www.bbc.co.uk/news/business-26249042
5 http://gpseducation.oecd.org/CountryProfile?primaryCountry=FIN&treshold=10&topic=PI
learning process. As in the Finnish “school-free” pedagogy, the “open-architecture” method acknowledges the students’ prior learning, allowing them to input current knowledge and skills, as opposed to perceiving them as an empty vessel into which the teacher pours information.

The open-architecture method seeks to motivate students by enabling their decision making in the learning process, for example by completing a design project or extended study. Furthermore, learning is made meaningful to students by exploring real problems in authentic contexts and promoting teamwork through which students develop their ideas and thinking, counteracting the typically closed nature of classroom learning. Above all, the students must be active, not passive in this method of teaching and learning and are thereby empowered and, hopefully, motivated to engage. This is a valuable concept but, as a teacher, I was intrigued to see the reality of such pedagogy in the classroom.

Finally, open-architecture lesson design fruitfully employs a physical open-architecture. This might include classrooms populated with easily movable furniture, not necessarily desks and chairs, but sofas, beanbags, ICT stations and mobile whiteboards; entire school buildings can primarily entail large open spaces such as theatres, resource centres and multipurpose spaces with rolling redesign potential. This can be realised by having wheeled furniture, including temporary walls, wooden seating blocks, and learning “pods” to be used according to the needs of students and teachers. I was keen to see how these spaces might be used and shared as part of day-to-day school life.

2. Key Findings

2.1 Regular curriculum reviews forge links between school education and modern society.

School can traditionally be perceived as a tool to prepare citizens for working life. In Finland, it is generally accepted, altruistic even, to suggest that school must prepare students for a future which we cannot predict or imagine. Therefore, as we do not know what knowledge students will need in the future, school must nurture students’ creativity and garner the skills they will need: “We don’t want the gap between society and school to grow, and we want our children to learn future skills, 21st century skills, and skills they’ll need in their working life,” Vice Principal of a Helsinki high school.

To prevent the gap between society and school from growing, the Finnish curricula are reviewed approximately every ten years. A conversation with a group of Finnish high school teachers revealed ideas that this might be “too seldom because society changes so fast now.” They suggested that curriculum reviews might occur more frequently to reflect societal change and that teachers need to review their curriculum regularly to reflect students’ changing needs in a rapidly changing world.

Developing pedagogy to reflect curriculum changes ensures the continuation of good teaching and learning and the relevance and contemporaneity of the curricula. Because research into how students learn has radically changed over the last few decades, pedagogical methods outlined in the curriculum should be updated to reflect this. Perhaps most notably, the expansion of the curriculum to include more open-ended exploratory-based learning pedagogy as opposed to finite curricula is crucial in modernising education. As a result, the Finnish curriculum is reviewed regularly to ensure that new pedagogies reflect students’ changing needs in the modern world and to ensure that such pedagogies are usefully integrated into school life, “not empty phrases in National Curriculum documents” (Vice Principal, Helsinki).
2.2 The new Finnish curriculum (2016)

Whilst traveling in Finland, I discussed the implementation of the new 2016 curriculum with teachers of students aged 7-18 years. The seven core components of the new Finnish curriculum surround the central heading: ‘growth as a human and citizen’. This reflects the holistic focus of Finnish education: to aid the development of the individual as a whole-child.

The seven core components are:
1. Thinking and learning to learn.
2. Cultural competence, interaction and presenting.
5. ICT skills.

The seven aims include the need for core skills, individual and personal development, expanding outwards to national and global awareness. The focus on metacognition, communication and life skills, alongside group work and a sustainable future clearly reflects the Finnish educational priority of preparing students to work together as creative citizens in an unknown future.

To enable the core components, the 2016 Finnish curriculum highlights the need for:

- Diverse learning environments so studying will take place more outside the classroom and in virtual learning environments.
- Students to move more and sit less.
- Students to increasingly use computers, laptops or bring their own device (BYOD).
- Students to study coding, computing and computational thinking throughout basic education.
- Active learning methods like drama, debate, role-play and games to be used more often.
- Students to take part in the design of their learning, engaging in more projects, exploring and solving real-life problems in groups.
- Students of different ages and grades to work more together
- Teachers to collaborate more together (co-teaching)
- Students to be teachers and teachers to be students
- Fewer summative tests (assessing what has been learned at the end of a unit of work) and more supportive feedback including peer and self-assessment (formative assessment).

This is intended to impact school culture by:

- Encouraging students to discover and use their strengths and personal interests in their learning
- Focusing on multi-disciplinary learning from a cross-curricula view
- Promoting international cooperation and friendships through students’ online presence
- Forging international teacher networks
- Endorsing student participation in developing their own school and creating a better, sustainable future.

Notably, the government acknowledges that:

- Aspects of the new curriculum relocate the teacher as student which grants teachers the right to make mistakes in the development and implementation of these new ideas.
- The success of the new curriculum requires the cooperation and collaboration of the whole school
community and of course the support of the head teacher.
- Teachers must be trusted during the development process.
- The new curriculum ought to be considered a process, not a product
- The curriculum is showing the way and the how (not what)
- The curriculum is flexible and developing, not stagnant

These citations confirm that the Finnish government trusts its teachers to innovate, collaborate, and develop classroom practice in line with government educational goals. It is clear that the government aims to move further away from traditional classroom-based teacher-led learning and subject stratification in favour of group work, student-led learning and cross-curricular projects intended to motivate and empower the learner and prepare them for a world which demands creativity and independence of mind.

2.3 Phenomenon-based learning and project-based learning
Formally introduced by the revised Finnish curriculum, this is a cross-curricular, problem-based learning method based in real life topics, ideas and issues (or phenomena). This pedagogy recognizes that school is preparing students for jobs that do not currently exist; for using technologies that haven’t been invented; for solving problems that we don’t yet know are problems. In so doing, PBL shifts emphasis from “what students learn”, to “how students learn”.

Rather than subject-based learning, reliance on textbooks or teaching particular units of information prescribed by the curriculum or syllabus, PBL seeks to create authentic learning contexts based on real-work problems or phenomena in a cross-curricular context.
Phenomenon-based learning and project-based learning demand extensive group work, thereby developing students’ independence and numerous transferable skills regularly called upon by employers, including:

- research skills
- project planning
- time-management
- teamwork
- project-development
- information assimilation
- ICT literacy
- presentation skills
- communication skills

Phenomenon-based learning will:

- foster curiosity, encourage questioning and critical thinking.
- develop problem-solving skills, link learning to real-life problems and encourage students to work together.
- develop students’ social, emotional and effective communication skills.
- increase understanding via a cross-curricular approach.
- raise active citizens by promoting participation and engagement.
- strengthen learners’ self-confidence and learning motivation.
- give constructive feedback.

This learning method sees information formed as part of a social context, rather than something belonging to an individual, where learners work collaboratively in groups to actively construct knowledge as a result of problem solving. Placing the student at the centre of the learning process, they actively seek and analyse knowledge and construct understanding in a truly student-centered pedagogy. Learning outcomes are not necessarily pre-conceived and there is no limit to what students might discover as part of the learning process. Furthermore, as teachers and assessors of learning, the focus need not be the information students learn from the project, but the skills they develop in the learning process.

Phenomenon-based learning and the integration of various “flipped” classroom methods which place students at the centre of the learning experience, is also a response to data which reveals that many young people around the world suffer mental health problems, in part, due to the stressful nature of modern education. The Vice Principal of a high school in Helsinki explains, “We’ve also had worrying results about many young people not being well in general. We believe that if young people are given more responsibility over their lives – [through]“owning their learning” - this would make learning more worthwhile, hence phenomenon-based learning and various flipped classroom methods.”

Finnish teachers believe that if young people are given more responsibility over their lives and increased ownership of their learning, their school experience would be perceived as more valuable. Correspondingly, the key aim of the Finnish curriculum, ‘growth as a human and citizen’, demands that school embodies a learning community which:

- Strengthens pupils’ positive and realistic self-image as a learner
- Emphasises an unhurried learning pace and peace
- Enables interaction and empowerment
- Secures students’ well-being and safety in everyday life
- Promotes awareness and respect for cultural diversity
Endorses responsibility for a sustainable future

It is clear the Finnish government respects the needs and health of the student body in its revised curriculum in tandem with the practical aims to develop skills and knowledge in a future citizen. There is limited preoccupation with student testing and quantitative data but, instead, a clear rationale on the purpose of education and flexible methods to ensure its realization in school.

2.4. A culture of trust

A culture of trust enables the success of creative pedagogies. Finnish teachers are not under scrutiny by the senior leadership team: national school league tables do not exist, which, in turn, reduces “top-down” pressure from government, to senior-leadership team, to teacher and, ultimately, to student, which would create a learning environment easily identified as stressful for all.

Finnish headteachers do not operate a “top-down” management system of imposing changes on their teachers. Teachers’ autonomy is evident in Finland and the chain of command is in many respects horizontal, enabling strong professional and collaborative relationships. This, in turn, accelerates the rate of change as teachers are free to implement new ideas. Furthermore, they are trusted to do so and to share their ideas with their colleagues.

Discussions with teachers and headteachers in the 8 schools that I visited and results from my survey of Finnish teachers revealed five key points:

- Finnish teachers have professional autonomy and creative freedom. They are trusted to teach and grade students to the best of their ability without the need for regular teaching observations, performance-management goal setting, progress checks or other types of work scrutiny such as

![Figure 2: A visual depiction of the mutual importance knowledge, skills, attitude and values to be explored by students from the OECD, 2016.](image)
book-checks which seek to analyse the quality of teacher marking, often in line with a whole-school marking policy which all teachers must follow.

- Finnish teachers feel free to work how they feel suits their personality and their students’ needs.
- Teacher observations are rare and make no impact on the teacher’s career progression. This type of routine scrutiny and performance management simply does not exist in Finland.
- School is highly valued in society and by parents
- Teachers are respected as well-trained professionals with excellent academic, social and practical skills. Furthermore, becoming a teacher is highly competitive in Finland and comparable, in terms of competition, with becoming a doctor.

In response to my questions about national standards for numeracy and literacy, one teacher remarked, “if a primary school child aged over 8 doesn’t know how to read and write, the school’s special needs teacher will help. We in Finland don’t see what a national standardised test would do to help the child - except officially show the same result that the primary school teacher would know anyway.” This response demonstrates that Finnish teachers are trusted as professionals to judge student performance and seek the appropriate help required for individuals to maintain their academic progress. Not only is this motivating for teachers, it shifts the emphasis in schools from teaching students to pass national tests, to addressing their particular needs as the teacher has been trained to assess and provide for.

Finally, interviews with high school students and teaching staff reveal that most students and teachers share the belief that the student is responsible for their own success. The teacher is trusted to provide opportunities and the facilities for success but it is the students’ responsibility to benefit from this environment.

2.5 Innovative use of technology

My research in both Finland and Denmark showed the integration of tablets and laptops in the classroom to promote student independence and potential for exploring cross-curricular links. As aforementioned, the 2016 Finnish curriculum encourages the use of online learning environments alongside interschool and international collaboration between students. This is seen to promote active learning, ICT skills and to feed students' understanding of the global community, transitioning their learning to the world stage.

Some teachers, however, fear that over-reliance on computers and online learning might become repetitive and uninspiring for students, particularly if teachers are reliant on online textbooks, despite the benefits of their interactivity. Likewise, many teachers emphasized the need to direct students’ use of ICT and maintain a varied selection of teaching and learning activities. More creative use of ICT in the classroom, such as students making films or documentaries in place of the traditional essay, were discussed with enthusiasm by both teachers and students.

Above all, it is clear that using ICT in the classroom, particular where students bring their own device, is still under development and brings pitfalls along with its benefits. However, overwhelmingly, teachers and students alike are keen to explore how ICT can be capitalised in the classroom and maintain that it aids student independence, group work and meaningful learning contexts.

2.6 Authentic learning contexts create meaningful learning

Authentic learning contexts make learning relatable and meaningful to students which motivates their
engagement and participation in the learning process. Moreover, this improves the likelihood of the learning reaching the long-term memory as it can be traced to a particular context.

Authentic learning contexts refers to a wide range of activities which enable student learning in a “real” context as opposed to from a book or similarly removed secondary source. Such authentic learning contexts might include school trips, educational holidays abroad, cultural excursions and museum visits. However, authentic learning contexts can also be created in the classroom via practical experiments, talks with experts or professionals, interactive projects, product design and creation, competition entries, video making, presentations, and many more.

Authentic learning projects, such as those created through PBL, offer a dynamic approach to teaching in which students explore real-world problems and challenges. Here, students are active participants, engaged in the learning, and therefore inspired to acquire deeper levels of knowledge, not only that to which they are directed by the teacher, and students are increasingly likely to retain their learning.

2.7 School-free pedagogy motivates learners
“School-free” pedagogy refers to the rejection of traditional classroom teaching practices and learning environments. As outlined above, creating a variety of authentic learning contexts is what characterizes “school-free” pedagogy and is highly motivational for students. Students enjoy and are motivated by the opportunity to collaborate in group work and a relatable “school-free” atmosphere, which makes learning relevant and meaningful.

Some practical steps have been taken to create a “school-free” environment, for example, Finnish students are encouraged to bring slippers or indoor shoes to school. Whilst this also helps to keep classrooms clean in a country where it snows for a substantial portion of the school-year, the “shoes-off rule” creates an informal, home-like atmosphere as students have a place for their coats, shoes and bags, adding to the homely feeling in which each student has a place, literally and emotionally. Likewise, all Finnish students receive a free-school meal and teachers are encouraged to eat with their classes to promote positive social relationships.

2.8 Inventive use of school architecture enables creative learning and teaching
In Finnish schools priority is given to indoor and outdoor spaces for students’ extra-curricular activities. Rooms or large open spaces in corridors are littered with sofas and armchairs where students can relax or share music performances at breaks and lunchtime. Outdoor spaces offer a range of play-based activities from football to cycling and teachers are encouraged to make use of outdoor spaces during lesson time.

New school buildings incorporate large multi-purpose indoor spaces which can be used for a range of activities, such as performances, assemblies, lectures, co-teaching, inter-class or inter-year group collaborations or simply student socialising. Many classrooms have furniture on wheels which can be quickly and easily rearranged for group or independent work or moved aside to make space for interactive or practical learning activities, as required. This physical architectural flexibility allows teachers and students to imagine and create new learning spaces and specific environments as required for a variety of learning activities.
3. Case studies: Nurturing creativity and transferable skills

3.1. Phenomenon-based learning, Tampere, Finland
I observed a class of sixth graders (C6) at Koivisto School starting the new school year with a phenomenon-based learning (PBL) project on the topic of *Forests*. Their class teacher (T1) has recently been appointed by the local education authority to help schools develop and integrate PBL in their curriculum and last year this same class explored PBL projects under the topic headings *Europe*, *The Human Body* and *The Vikings*. T1 observed that the students’ familiarity with the learning process was noticeable this year in their improved pace of learning, organisation and confidence to work independently.

When interviewed, T1 expressed her belief that a school should, above all, provide a place for students to develop their self-knowledge and personal character as well as being a centre of academic learning. T1 believes that, because knowledge is everywhere in our society, students must focus on learning skills, notably how to work together, to communicate effectively, to respect each other, to plan and manage projects, and to find and process information and to learn for their own gain.

3.1.1 How was the PBL project organised?
The planning stage of a PBL project in C6 involves student and teacher collaboration. In small groups, the students discuss what they want to find out, set personal learning goals and decide how they will present their learning at the end of the project. This planning is usually completed as a group mindmap or padlet and overseen by the teacher who might encourage students to pursue particular avenues of investigation as appropriate to their ability.

T1 next begins a class discussion, where students plan how best to discover what they hope to find out, for example by taking a class trip, visiting a museum, researching online or in the library, or by asking a professional such as a doctor to deliver a class talk. When the students begin researching their projects, they are free to reshape their learning goals according to what interests them most and begin to research this, using the methods outlined in the class discussion. In this way, aspects of PBL are directed or structured by teaching staff but suggested by students, thus motivating their engagement in the learning process.

3.1.2. How are the groups organised?
Students can conduct a project alone but, most often, T1 observes, students choose to work in groups. Students select their own groups so, to combat any student being excluded from group work, C6 has developed a class rule whereby, if someone asks to work with a group but is denied this, the student who rejected their peer must complete this project alone. This means that no one works alone unless they choose to. Nevertheless, T1 finds this is rarely a problem as she dedicates lesson time to discussing the requirements for effective group work and, according to her observations, her students have become increasingly socially intelligent and inclusive.

3.1.3. How are students monitored or assessed in PBL?
Students choose how to present what they have learnt in a PBL project, for example, for the *Vikings* project, some groups made large, intricate model Viking boats, which they presented to the class explaining the finer details of their models, which showed a range of skills and knowledge from art and design to historical and geographical knowledge. Sometimes T1 gives all students a particular task to complete as part of their

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6 Padlet is a formative assessment tool for everyday use in the classroom. See padlet.com to create one or YouTube for a quick padlet how-to video: [https://www.youtube.com/watch?v=5c9vWCPn8ys](https://www.youtube.com/watch?v=5c9vWCPn8ys)
project, for example a PowerPoint presentation, however, she avoids prescribing tasks as it removes the students from the planning process integral to PBL.

Crucially, the final piece of work or presentation is not the only assessment or the most important one. T1 carefully tracks each student's progress throughout the project through observations and discussions with individuals as well as whole-group reviews. For each student, T1 makes careful notes about the role, input and motivation of the child during the project and shares this information with parents/careers. By recording the role that each student takes in each project, she ensures that students vary their roles from project to project to develop a range of skills. T1 also ensures students can explain their project plan and next steps to meet the deadline; time and project management are important life skills for students to develop through PBL.

Just as T1 ensures students engage in a variety of roles and activities, T1 expresses that variation in assessment styles is essential in changing education. Alongside written tests, T1 incorporates oral tests at the end of projects where students are given the opportunity to tell her what they have learnt in a discussion of their project. In these assessments, she does not have a predefined set of answers, which students must produce to pass, instead she is looking to find out what they know, the depth of that knowledge and their level of understanding.

T1 has found many less academic students, in the traditional sense that they do not enjoy or excel at writing express that they find oral tests much easier than written and have been very pleased, sometimes shocked, by the positive outcome of these oral exams. It might be useful to see such open-ended assessments in opposition to cloze or multiple-choice examinations. If a student sits a cloze or multiple-choice test and knows none of the answers, it does not mean that they don't know anything about that particular topic. The teacher will find out what they do not know, but discover little about their existing knowledge and understanding. Open questions such as T1’s oral exams allow students to show what they’ve learnt unrestricted by the teacher’s agenda or the information listed on the curriculum.

Significantly, when grading student projects, T1 emphasises that it is not the final result that determines their grade, but the process they went through to achieve the final piece of work. For example, if a student decided to produce a painting, it's not the painting that is graded but how they did it: the planning, the
thinking behind it, the quality of their ideas and the process. The students also partake in peer assessment at
the end of a project where the focus is on providing positive, constructive ideas on how to improve and
achieve further. This leads into the class establishing a class goal (usually put on display in the classroom) to
which all will aspire, such as C6’s, “We will listen when others are speaking.”

Finally, Google Forms is used to link teachers and students via email. Teachers can set work or
questionnaires for students whose responses arrive directly to the teacher via email. T2 comments, “Google
Forms automatically converts the answers of students into Excel charts and/or graphs, so teachers do not
need to browse emails one by one”. It’s a convenient way for teachers to conduct formative assessment,
which students can respond to at home or at school.

3.1.4. Teacher feedback

Once a month, T1 meets with each student to discuss
his or her academic progress, personal progress,
achievements and goals. She does not believe it is
enough for parents to know how their child achieved
in an exam or test. Alongside this information, she
includes an account of the child’s personal goals, news
and feelings about their whole school experience to
give parents/carers a broader perspective on how
their child experiences school day-to-day. She shares
the student’s perception of their strengths, how they
want to develop socially, emotionally and any
personal goals they hope to achieve, even if related to
a hobby, rather than an academic subject. T1 believes
this to be the key to students’ self-knowledge, a broad
and balanced education and thereby, towards the
students’ understanding of their direction in life.

Using the details from the report card, which
describes her observations of and discussions with
the student, T1 reports to parents monthly. Parents
are encouraged to return this report with their
feedback, enabling an on-going qualitative dialogue
between teacher and parent. This academic and social
report of the student in which the child is encouraged
to participate clearly reflects the holistic aim of the
2016 Finnish curriculum.

3.1.5. How successful is this teaching and learning method?

- When interviewed, students emphasise that they enjoy the freedom and independence afforded to
  them by the group learning structure and project-based method.
- Students work independently and develop a range of skills required in the modern workplace:
discussion, teamwork, planning, time-management, online research, information processing and

Figure 4: An example of the feedback sheet used by T1 to
complete the students’ oral exam on the topic of Rome.
T1 believes that variation in testing methods is crucial to
fairer assessment by providing alternative ways for
students to communicate what they have learned.
presentation skills.

- Subjects are integrated and students learn in a variety of contexts, which makes the learning more relatable and meaningful.
- Students feel they are learning for themselves, not for the teacher or to pass a test. They have planned their own project and are motivated to take part for themselves, often deepening their knowledge through independent research, which, T1 notes, they choose to conduct at home often extensively and far beyond what she would expect them to produce as homework.
- Students feel motivated because they have set their own learning goals and project outcome. T1 notes that, often, what they choose to find out is available in the textbook and could have been taught using more traditional comprehension exercises but, because they have chosen what to discover in their class and group discussions, they are self-directed which appears much more interesting and motivates the students.
- Project-based learning throws many problems at students, which they are required to solve independently so they learn to think for themselves.
- Working together develops their social-emotional intelligence. T1 has found C6 students improved their ability to solve disputes without her intervention possibly due to the improved communication and social skills developed via PBL.

3.1.6. What are the disadvantages of this learning style?

- It can take time for students to acclimatise to this learning process. At first, T1 found there was a student who did very little, who claimed they didn’t know what to do or who complained that other students didn’t let him/her join in. However, after completing one project and becoming familiar with the process, T1 notes they have vastly improved their ability to self-manage and their pace of work and engagement improved rapidly during the second PBL project.
- It can be more work for the teacher to prepare in terms of planning, preparing the progress-tracking process and making time for monthly discussions with each student. Nevertheless, T1 finds the long-term benefits of her students’ self-confidence and the coherence of the class to be very fruitful. Above all, she believes that the students are learning the skills they will need in later life and some teacher time is gained while students work independently in their groups.
- The classroom can be quite noisy during PBL hours compared to the traditional image of a
classroom. However, this is because students are active and at the centre of a truly student-led learning process. T1 explains that we don’t know what sort of jobs we’re preparing students for so it’s important that they have excellent team-building and social skills and freedom to communicate is crucial to this.

- Some students are very reliant on computers or tablets to complete their research so it is up to teachers to direct students to a variety of resources and learning contexts to develop their range of learning experiences.
- Schools, such as UK secondary schools, who break the timetable into discrete subjects may need to alter school timetabling to enable PBL due to its cross-curricular nature. Teachers would also need time to collaborate during the planning process, which could be challenging given the workload of most UK teachers.

3.2 Authentic learning contexts, Finland

As aforementioned, the role of authentic learning contexts is to make learning relatable, meaningful and therefore motivate students to engage in schoolwork and activities, which seem relevant to them. Changes to the Finnish curriculum prioritise “authentic” learning contexts detailing that students should be:

- Moving more and sitting less.
- Learning more outside the classroom or on the Internet.
- Making use of more functional methods, drama, debates, as well as learning through games.
- More involved in their own learning and classroom planning.
- Taking part in a variety of projects.
- Studying and solving everyday problems in groups.
- Undergoing less extensive testing (learning assessments) and more feedback discussions, self-evaluation and peer evaluation (assessment to aid and promote learning).
- Contributing to the development of their school and working to support a better, more sustainable future.
- Participating in week-wide multi-disciplinary learning packages, which include various teachers and students from different grades.

An example of learning in “authentic” contexts, which I experienced in Finland was a 3rd grade class trip to the market. To prepare for this trip, the class discussed what they might see and learn there, how to behave safely and what they should take with them, touching on life skills and oral literacy. The students then drew pictures of what they expected to see at the market and might hope to buy. Most students searched for images of fruits and vegetables, sketched or painted these, discussed the health benefits of fruit and learnt their names in English, thus integrating studies of art, English health science and ICT skills.

Whilst this particular trip may not seem ground breaking in its location or subject matter, the students’ enjoyment and enthusiasm for the trip was abundantly clear and, crucially, it is this type of authentic learning which can be regularly and meaningfully absorbed into the curriculum with little cost and maximum impact. It was clear that the students enjoyed both the trip itself and the classroom activities related to the trip took on a significance and relevance that they may not otherwise have had. T2 remarked, “it’s a great example of a simple, no cost idea that can still be pedagogically worthwhile.”

Other changes to the 2016 Finnish curriculum which teachers will implement this year and onwards include:

- Giving 4th grade students an optional subject for 1 hour per week based in thematic learning, such as ‘Jump into history’, ‘the wonders of nature’, ‘the mystery of ... e.g. plastic, air, water,’ with a verbal
evaluation at the end of the year.

- The evaluation will involve the student, teacher and, if desired, the parent/carer.
- The teacher gives feedback on the student’s work, abilities and team working skills. Feedback discussions should explore the student’s perception of themselves as learners. In addition to assessing the level of competence, special attention will be paid to learning progress and the development of learning skills.
- Working skills are assessed as part of the subject feedback.
- The assessment uses a five-step rating scale (excellent, good, satisfactory, moderate, and lacking, the last of which will be displayed only if the student does not pass performance).

Although I wasn't traveling for long enough to see a full annual cycle such as that described above, please refer to case study 3.1 to explore how this might play out over time.

### 3.3 Entrepreneurship, Helsinki

The entrepreneurship programme at a high school in Helsinki is an example of an authentic learning context particularly appropriate to older students. This popular optional course encourages students to make their passions a reality by planning and running their own business. Students work in groups to design and initiate a product or service, developing the skills required by entrepreneurs: being your own boss, interacting with others, planning and managing your own business in real time, communicating with customers, advertising and promotion etc.

The entrepreneurial project is characterized by students’ independent development of many skills:

- Responsibility
- Creativity
- Community
- Goal-setting and planning
- Experimenting

Students can work alone or in teams to create a real product or service and, in so doing, respond to real-world affairs by actively cooperating and networking with other enterprises in the community to develop and promote a competitive product or service. The teaching is therefore cross-curricular by nature and often includes online learning environments as well as real life interactions. These projects make study entirely the responsibility of the student: it is constructed by them and for them according to their own choice of interest. Furthermore, skills of innovation and problem solving are necessary in the initial ideas stage when finding a gap in the market and designing a unique or original product or service.

There are 8 entrepreneurship course units, of which students can study one, all eight or something in between. Many courses encourage trips and international cooperation and provide the opportunity for students to participate in competitions, cementing the learning context as authentic and transitioning it to a global stage.

The entrepreneurship groups I observed were working in a relaxed environment, in a classroom furnished with beanbags and computer clusters. As it was September, they were in the research stage of the entrepreneurship programme and worked mostly independently of the teacher to design their product or service and plan its inception. Interviews with entrepreneurship students revealed their enthusiasm for the module – they enjoy the freedom to create something of their own that will become a tangible reality.
3.4 Learning through play, Finnish kindergartens

Play is considered crucial to child development in Finland and correspondingly respected in Finnish kindergartens where all children must come to school equipped with appropriate outdoor shoes and clothing to enjoy a minimum of 2 hours free-play outside. Furthermore, kindergarten teachers must have a BA in early childhood education to fulfil this role (primary, middle and high school teachers need a Master’s degree). Kindergarten teachers are therefore experts in the pedagogy of play-based learning and fully trained to initiate and create environments for play-based learning through both directed activities and free-play.

Notably, there is no pressure on students to begin studies of literacy and numeracy until they leave Kindergarten and start school during the year they turn 7 years of age. In Finland, teachers and parents alike emphasise that it is not a concern if a child cannot read before they start school aged 6 or 7 years. Of course, many children do learn how to read to some extent because they choose to pick up a book, read with parents or teachers or acquire literacy skills through their daily experience but it is significant that this is the child’s choice. Instead, the focus for Kindergarteners is to develop socially and emotionally through interaction with peers and teachers and to cultivate their creativity through play, so that they acquire the independence and flexibility of mind to access the curriculum in later life.

3.5 Open-architecture teaching and learning, Hellerup Skole, Copenhagen

3.5.1 The school’s vision

Established in 2001, Hellerup Skole’s unique architecture is the product of a shared vision developed by a group of politicians, teachers, parents and students. As part of the planning process, the local municipality requested that the building contractor and school staff reflect on the wider world and create a school better suited to the challenges of modern global societies, a building to reflect the times we live in.

The users of the space were at the heart of the planning process through a series of workshops and discussions to guide and inspire the architects. The focus of the collaboration was, of course, to benefit students and the key values behind the school’s pedagogy are openness, flexibility and innovative thinking. This pedagogy has been transformed into a large, unified and open learning environment: an open-architecture school.

The teachers at Hellerup Skole believe that, alongside learning to read, write and count, students must be able to work together. Additionally, the teachers acknowledge that they cannot predict what each child will need to know when they leave school and join the working community, therefore school should be flexible, which Hellerup certainly is. The learning environment is literally moveable: it can be shifted and redesigned by students or teachers to suit the activity, providing the potential to teach and learn differently.

3.5.2. How is the space organised?

In the centre of the school, there is an open-auditorium stairway, which can also be used as a classroom and functions as a social meeting point. There are platforms on this central space where students can sit, talk, study or participate in group work, one of which creates a stage, currently littered with musical instruments. There is also a mini cinema in an enclosed space in the central atrium known as, “The Whale” due to its imaginative shape. Balconies on each level overlook this central, communal space at the heart of the school.

Set on three levels, the ground floor is for the youngest students, where there is also an open library and
resource centre complete with sofas, beanbags, bookshelves and computers; the middle floor is for the middle grades and the top floor is for the oldest students. However, students are free to roam the school as they wish, and enjoy the many “breakout” spaces at their leisure. Physical activity including climbing and even table tennis (there are several indoor table tennis tables) is encouraged and students are free to use the spaces available as best suits their learning needs. There is a focus on the child as an individual at Hellerup and it is accepted that every student has his or her own learning style and so the school is designed to provide a variety of learning spaces to tailor to diverse learning needs.

Stationary computers line many of the walls, the open science laboratory, located on a wide corridor, leads onto a garden terrace where animals and plants are cared for and even the staff room is an extension of the open space on the third floor complete with comfortable chairs, a kitchenette and dining area, where staff are encouraged to relax and socialise.

Smaller spaces within the open areas are established with robust temporary walls (many bearing whiteboards which anyone is free to utilise) and large wooden blocks (some of which are carpeted for comfort); these can be moved and rearranged as desired. Hexagonal pods, rooms within rooms and tiered seating areas also break up open areas to create more intimate spaces in which classes or groups develop a sense of trust and community spirit. Notably, all class groups have a “home” area, usually one of the hexagonal pods, which is used to support social bonding and the formation of groups. The “home” spaces are
typically tucked away in a corner of one of the floors and provide a sense of belonging for students from which they may roam out to find a place best suited for their personal study. Whole-class instruction often takes place, for example, at the start of a new project, in the “home” space.

Whilst the “home” space creates a sense of belonging for the student, the open spaces reflect a sense of curiosity both in others and oneself, which promotes active participation in learning. Crucially, the open-architecture provides many different spaces for the students to experience and find a place in which they feel comfortable and can enjoy learning. Overall, Hellerup Skole intends to create a welcoming environment where the students feel valued, safe and free to explore.

You can take a virtual tour of the open-architecture on YouTube.7

3.5.3. What impact does the building’s open-architecture have on teaching and learning?

My first impressions of the school were of a lively, open and energetic environment, a friendly space with striking informal architecture that creates a social and welcoming atmosphere. In the open spaces, there are no traditional classrooms so each child can find their own place to sit and work in their own learning style, according to their own ability for that activity.

The teachers note that because Hellerup students have so much freedom, they take ownership of their projects and therefore of their learning. They also become very curious and very motivated. The teacher’s role is to give guidelines, to inspire and to assist whilst the child directs their own learning: the more emotional input a student is able to give to their learning, the more energy they have for the project, the more committed they are, and the more positive the outcome.

The students I interviewed at Hellerup feel respected and trusted by the teachers to work independently and, in return, they feel they can trust the teachers. This culture of mutual trust and respect between teachers and students is a crucial part of the foundation of successful learning in this open environment.

The prevalence of self-directed projects and

Figure 7: A range of malleable learning environments consisting of easily portable furniture, shelving, whiteboards and, shown in the background, dark grey temporary walls form a hexagonal pod.

7 Take a virtual tour of an open-architecture school here: https://www.youtube.com/watch?v=6A7WeRvO1-U
group work in the Hellerup curriculum means that students use laptops, tablets and other handheld devices regularly, therefore ICT skills are prized highly here. These are perceived as key skills alongside literacy and numeracy that students must develop to be ready for the working world. Correspondingly, all students can connect to the school’s wireless internet and bring their own device to school.

However, there aren’t any dedicated ICT lessons at Hellerup. Students are encouraged to bring their own device (the school can provide for those who don’t have their own) and use of laptops, video-making and ICT skills are integrated into the curriculum across all subjects and are integral to the research, planning and presentations during project weeks. Teachers report that many students have even started using Skype or other video-messaging devices to conduct group work from home.

3.5.4. How is the timetable organised?
The principal factor of the Hellerup timetable is flexibility. It changes. However, as in traditional schools, classes are organised by age, are mixed ability and each class has a timetable. The major difference is that most months, each class has a project week. This project is likely to be focused on one subject but naturally incorporates skills and knowledge from other subjects as the project progresses.

The following week, the usual class timetable will be replaced by a timetable, which allows students to catch up with subjects that they were not covered in the project, for example, foreign modern languages are unlikely to emerge in a project exploring ‘space’.

For example, a 7th grade class of 12-13 year olds whom I observed, spent a whole afternoon in French class completing a project named, ‘Ma collection’. This extended French lesson made up for the lack of French in the independent science-geography project that they completed the week before on the topic of ‘Water’.

3.5.5 What does project week entail?
Project week is usually once a month and is based in a particular subject but skills and knowledge from other subjects become integrated into the project as a matter of course as students research and plan their final presentation or product.

Each of the three classes in the year group come together and are encouraged to socialise with one another before choosing their own groups. This promotes social interaction and a cohesive student body. Typically, students choose to work in groups of 3 or 4 and groups larger than 5 are not encouraged. The students are briefed on the title and topic, content guidelines are suggested and key skills, such as, project-planning techniques and presentation skills, are taught by staff. Often staff will team teach during project weeks and are afforded time to collaborate beforehand. Students are free to plan and bring their projects to fruition as they wish during the week, seeking teacher guidance as and when it is required and will present their final pieces of work to the group at the end of the week when peer, self and teacher evaluation takes place.

3.5.6. What are the advantages of teaching and learning at Hellerup Skole?
- Project weeks, as with phenomenon-based learning and project-based learning programmes, allow students to select their own groups, design their own projects and self-direct their learning which is highly motivating and develops a mature attitude to learning as students feel trusted to work independently.
- Students develop a broad range of social, emotional and academic skills through group work, project design and planning which are directly transferable to real life situations and the world of work.
- Teachers benefit from collaboration and team-teaching, which they find motivating and allows
them to benefit from one another’s expertise.

- Students feel a sense of ownership over the school space and their learning as they are encouraged to move around the building and use the spaces as best suits their needs.
- The highly social and integrated atmosphere of the school encourages students’ social, emotional development, a sense of whole-school community and a culture of trust between students and teachers integral to the success of project-based learning.

3.5.7. What are the disadvantages of teaching and learning at Hellerup Skole?

- Students, particularly the older students (aged 14 years+) note that noise can be a problem due to the open-architecture which can be distracting. However, they also explained that they can’t benefit from group work or the building’s many spaces without its open architecture and that they acclimatise to the noisy nature of school life. Furthermore, there are some quiet spaces to be found in closed rooms on the upper floors for older students.
- During group work, teachers cannot oversee all students at once so it is of course possible that some students will evade working at all. Discussions with students and staff about slacking during project week, however, reveal that it becomes clear on the presentation day of project week when someone has not contributed to the project and teachers are quick to meet with parents to discuss the student’s lack of participation, which is not tolerated over the long-term. Furthermore, this is a problem, which may arise in a traditional classroom setting and is not necessarily made worse in an environment where students are encouraged to learn by and for themselves according to their own strengths and interests.

4. Features of successful programmes

- Successful project/phenomenon-based learning programmes are embedded in schools’ curriculum teaching and timetabling is flexible to account for this.
- Project/phenomenon-based learning programmes take place on a regular basis e.g. monthly and are highly planned by staff who are given time to plan and collaborate.
- Likewise, feedback to students and parents is highly planned by teaching staff.
- Teacher collaboration and team-teaching is encouraged to provide students with appropriate expertise during cross-curricular projects.
- Projects are designed to develop transferable skills as outlined by the national curriculum.
- Teachers are passionate about the importance and benefits of this pedagogical stance in developing the whole-child, motivating them to learn independently and giving them ownership and agency in a modernised school environment.
- Careful consideration goes into the teaching and preparation of particular skills required in project-based learning, for example, effective oral presentation skills.
- Feedback methods are carefully designed and pre-planned (can be time consuming)
- Learning is well-paced as students work to their own ability.
- Students engage with learning topics in a wider context and often benefit from a variety of authentic learning contexts.
- Learners are active, not passive, in the learning process.
- Teachers trust their students to engage in their project independently or in groups and communicate regularly with students and parents to promote active participation from all students.
5. Implementation ideas for teachers and curriculum leaders in schools

As a teacher, I recommend that senior leadership teams in secondary schools and sixth form colleges invest in extended and embedded cross-curricular programs, which have proved so effective in Finland and Denmark. Teachers should be given ample time to collaborate, plan and create resources for phenomenon-based or project-based learning sessions or similar cross-curricular projects appropriate for the particular school, and these should take place regularly. Flexible timetabling is necessary to enable this. Teacher collaboration and team-teaching should endure the duration of cross-curricular learning to ensure students benefit from their expertise across the subjects being explored.

Additionally, I recommend that students are involved in this planning process in order to motivate and set the tone of student-led learning. Correspondingly, schools should research and adopt student-led learning methods for these cross-curricular group projects. Students should be introduced to project planning techniques and learn to display their planning and project progress through transparent methods such as via extensive use of visual aids – whiteboards, post-it notes, posters – which are regularly updated by the students to aid teacher tracking and support. They should also develop various visual, ICT and oral presentation skills in order to convey their learning.

A shift in the physical architecture of schools would aid the implementation of such project-based, student-led learning. Ideally, new school facilities would be built to reflect the open and shifting spaces of Hellerup Skole to aid group work, creativity and cross-curricular learning as well as to make better use of outdoor spaces such as creating outdoor classrooms in the form of amphitheatres, shelters etc. Current schools can adapt to an open-architecture learning method by reducing the use of the traditional classroom environment (desks and chairs). Most simply, as many teachers already do, desks can be arranged in groups or moved aside so students can use the space in the centre or desks on the periphery as best suits their working needs.

Building on this, existing schools might develop outdoor spaces by creating outdoor classroom and investing in log stools, waterproof mats to kneel on or even stone/brick amphitheatres which can be booked by teaching staff on the school intranet (in many schools, this is how ICT suites, drama studios or halls are currently booked). Larger spaces can be transformed into smaller spaces through use of temporary walls, which can be rearranged for purpose. Bean bags and other soft, light-weight furniture can further develop a sense of “school-free” learning by promoting student comfort. In turn, this will motivate their learning by giving them a sense of control over their school environment and allowing creative use of the space to promote their independence.

6. Conclusions

It was inspiring to see examples of “school-free” pedagogy and “open-architecture” lesson design in practice in the classroom in Finland and Denmark and I am confident that their implementation in UK schools, even to a minor extent, would benefit students’ social, personal and academic development immensely. I was lucky enough to observe lessons, interview teachers and students, and visit teacher training schools and this has certainly developed my understanding of how teachers might effectively employ creative and cross-curricular pedagogies and the benefits of these practices for students, particularly in terms of their motivation to participate and engage in their education.

From my interviews with students who participate in these learning methods, I can conclude with confidence that their involvement in group and independent cross-curricular projects is motivational and, for the most part, enjoyable. Perhaps an obvious question for teachers and parents alike is that of student participation: what if a student, when left to independently develop a group or independent project, will not participate? I
discussed this with many students, most of whom contributed the same two responses: firstly, that it’s boring if you don’t join in because there’s nothing else to do and, secondly, that it’s more fun to learn like this and they like the independence, the opportunity to work with friends, and the variety of ways in which they can present, including making films, PowerPoints, role-plays and many other mediums. Students explained that they didn’t want their independent project time replaced with more traditional teaching methods.

Notably, most students I interviewed were very articulate and competently conveyed their belief that it is a fun way to learn; they enjoy having to push themselves and each other without teacher intervention and that they have the freedom to plan, research and create their own projects.

From my research, I am confident that these pedagogies develop student independence, creative thinking and problem-solving skills, which, in turn, fosters transferable skills appropriate to a contemporary working environment. Individualism is on the rise in society and it is important that the curriculum adapts to value and reflect this; each child has unique talents and ideas to bring to the learning process.

Finally, it is evident that successful project/phenomenon-based learning programmes are embedded in schools’ curriculum teaching and timetabling and take place regularly, often monthly. Indeed, recent newspaper reports since my travels suggest that future reforms to Finnish education might remove traditional subjects entirely in place of teaching topics.

7. Recommendations

At primary school and pre-school level, I would recommend that the government follows Finland’s lead by delaying the commencement of children’s formal education to 6 years old, instead allowing children to focus on play, particularly outdoor and creative play. To prepare for this, the government might introduce a degree-level qualification such as that explored by the research of David Whitebread and team at the PEDAL project at Cambridge University, so that all Kindergarten, nursery and pre-school practitioners are qualified to lead, promote and inspire play-based learning. This would catalyse development of creative and independent skills which students would need for PBL style projects in later years. The department of education might look to the research at PEDAL to explore the manifold psychological, social, emotional and intellectual benefits of play for young minds and its impact on later education and learning potential.

An obstacle to focusing on play-based learning during early years education and KS1, aside from the need to train staff, might be providing appropriate space and play-equipment. Ideally, schools would provide green spaces for nature-based play which may prove difficult for schools in urban areas. This could be combatted through partnerships with local councils whereby schools could gain access to local parks for use during school hours.

In terms of standard secondary school practice and UK education policy, I recommend a restructuring of the curriculum for years 6-9 (the final year of Key Stage 2 and all of Key Stage 3, ages 10-14 years), whereby the curriculum is predominantly subject-free in the traditional sense, as in the Danish Hellerup Skole method. This might resemble a shift in the structure of education via a return to a “middle school” system of 4 years.

Considering the serious backlash from both teachers and parents against the new KS2 SATS, this could be a welcome alternative to current curriculum content which focuses on the questionable acquisition of A-level

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8 For further information about PEDAL, see: https://www.educ.cam.ac.uk/centres/pedal/
English Language level grammatical knowledge and traditional rote-based learning and teaching-to-the-test to prepare for formal national assessments. In a “middle-school” style system, students would have the opportunity to grow as group learners, develop their own interests and areas of expertise in a creative, cross-curricular capacity and mature socially and emotionally before selecting their subjects for examination at GCSE and A-level and experiencing the stresses of formal nationalized testing.

Current students will be unaccustomed to such freedom of choice in the school environment, therefore, in the initial stages of implementing PBL, students will need to be explicitly taught key skills such as those relating to research, project planning and presenting. However, the adoption of play-based learning in early years will promote student independence and creativity and therefore their ability to engage with PBL. Also, it is likely that the amount of guidance students require will decrease over time, being highest at the point of implementation, as the priority of education shifts from acquisition of specific knowledge to skills-based learning.

Likewise, time dedicated to seminars or webinars for parents/guardians to share the aims, structures and outcomes of PBL projects would support their execution and impact in the classroom.

The department of education has already abolished the level system whereby students are graded with a learning level (numbers 1-8) through key stages 1-3. I support this and recommend that quantitative grading or levelling be replaced by qualitative reporting methods between teacher and parent, which might also include the student’s voice. Such reports should reflect on students’ ability to work in a group, plan, collaborate, present ideas and other practised skills alongside their progress in literacy and numeracy skills. Such reports would reflect positively on the students’ skills and talents offering areas for improvement rather than a grade or level ranked against what is considered “average” for a student of their age or other such quantitative measurements. Again, parents/guardians would benefit from documentation detailing this style of assessment and reporting, and, furthermore, parental inclusion in the type of information exchanged between parents, teachers and students would be likely to garner support from parents and guardians.

Such a shift in assessment would allow the government to make a U-turn in performance-related pay. This controversial performance management method means that the success of a school and a teacher is directly linked to traditional student assessment: formal examinations, which test finite areas of knowledge. It places teachers under intense scrutiny, increases teacher stress and demands a constant, often unhelpful, quantitative assessment of students. Teachers should be trusted as professionals to teach and monitor their students, as they deem appropriate.

Whilst it is commonly thought that teachers dislike performance-related pay because it may influence their salary, it is crucial to remember its impact on children and adolescents: a pay and performance-management system which demands teachers prove and quantify their students’ progress creates a clear line of pressure which rests heaviest on students. This results in high levels of student stress and devalues learning for the sake of learning: they learn that school is about learning to pass a test, not learning for life.

With the clear and shocking rise in child and adolescent mental health problems in the UK, surely the structure and make-up of our education system, where children and teenagers spend the majority of their time, ought to be evaluated and restructured to alleviate and avoid such stresses and anxieties by focusing on the development of the whole-child and the individual.9 I reiterate: they are not vessels to be filled with information and tested. As a headteacher in Finland aptly phrased it, “we’re not learning for school, we’re

9 Among teenagers, rates of depression and anxiety have increased by 70% in the past 25 years, particularly since the mid 1980s (www.youngminds.org).
learning for life”. To this end, it is time to re-evaluate what school is for, what it provides for students and how it does so.

Finally, it is imperative that the government allows schools the budget to improve provision and funding for teacher’s CPD in cross-curricular projects such as phenomenon-based learning and play-based learning projects. One clear method of doing this would be through providing sabbatical opportunities for teachers to invest in their extended CPD in these areas before reporting back to their school or department and initiating projects in their school[s]. Whilst this may be seen as an expensive investment, financing teacher professional development may have a positive impact on teacher retention: a huge issue in the current landscape of UK education. ‘Of the 21,400 who began teaching in English state schools in 2010, 30% had quit by 2015, the schools minister, Nick Gibb, confirmed in a written parliamentary answer.’ It might be more economical to retain and invest in those who are already qualified and experienced teachers, rather than directing funding to subsidise new trainees.

Notably, Pasi Sahlberg of the Finnish Ministry of education states, ‘No country should aim to replicate the educational models of others. […] What governments need to get right is the big picture for the educational landscape of their nation. The road to a better education for all our children is not to return to the past but to build schools where curiosity, engagement and talent can be discovered and nurtured. That calls for integrating research-informed international lessons into local needs and capacities.

8. Dissemination

Whilst travelling, I used my blog, rethinkingtheclassroom.wordpress.com, to share my experiences of Finnish and Danish schooling and related pedagogical ideas. This blog has kindly been shared by the Leeds NUT (National Union of Teachers) Facebook group and the WCMT website to cultivate readership.

In the UK, I intend to share my findings with teaching staff and senior leadership teams at local schools via CPD sessions. These will be interactive sessions, which explore how to implement cross-curricular and project-based learning methods in a student-led capacity. I will give adequate time for teachers to raise queries specific to their school and facilities so as to best promote schools’ uptake of these practices. I hope to use local teaching alliances and personal contacts with the local Universities schools of education to access and influence as many schools as possible.

Furthermore, as an NUT member, I hope to publish an article in the NUT magazine to disseminate my findings to a national teacher audience.

In order to progress with this project, I would certainly be interested to speak to a Department of Education representative about a phenomenon-based learning pilot program with a view to its implementation on a national level in future.

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11 https://www.theguardian.com/profile/pasi-sahlberg
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