

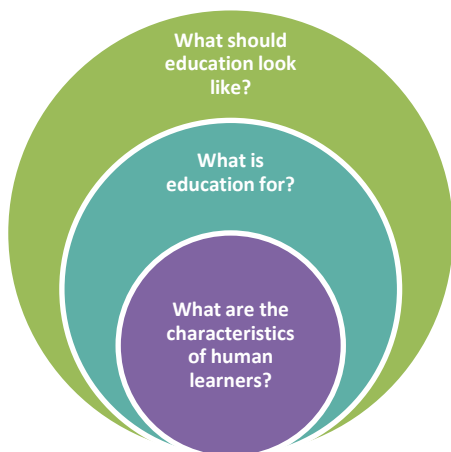


Select Committee on Education enquiry: the purposes and quality of education in England

Dear Committee,

Your three questions are all key, and rightly you place the first one first. The question, phrased slightly more broadly, is **What is the purpose of education?** For many, now and over the centuries, this question does not stand alone, and you've followed it with two questions in the area of **performance**. This is fair enough. But beginning with the question **what is education for?** is a hard place to start, especially for politicians, for whom questions of economy (growth, global competition, etc) tend to dominate.

We invite you instead to come at this question in another way.



approach, we've worked to tease out some basic principles: they are challenging, yet helpful, and the results in terms not only of children's engagement, but also their rounded development of skills, is compulsive. In this introduction we'll introduce them.

Characteristics of human learners

Observation, research and our own self-knowledge tells us that we are **born to learn** it is hard-wired into us as humans; it is what identifies us as differently sapient beings (homo sapiens) from

- WHAT SHOULD BE THE PURPOSE OF EDUCATION FOR CHILDREN OF ALL AGES IN ENGLAND ?
- WHAT MEASURES SHOULD BE USED TO EVALUATE THE QUALITY OF EDUCATION AGAINST THIS PURPOSE?
- HOW WELL DOES THE CURRENT EDUCATION SYSTEM PERFORM AGAINST THESE MEASURES?

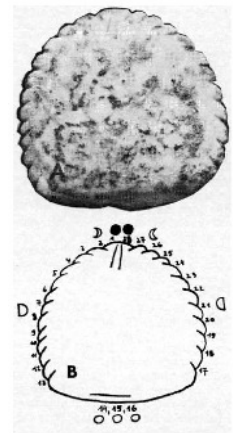
Firstly, to consider: **What are the characteristics of human learners?** Then we are better able to consider the next two questions: **What is education for?** and **What should education look like?** (Then you can also ask: Does it actually look like this? Is it good enough? How can we tell? If not why not etc which I think are what you mean by your second and third questions.)

We have been working on your question for 20 plus years, within the field of early childhood education, along with others who've also been so doing for much longer. Along the way, within our action-research

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others in the animal kingdom. By learning we mean to enquire to make sense of the world to connect with it, and with others in it. Central to how we do this are the imaginative, creative faculties through which we have evolved our cultures and societies: a witty combination of enquiry and imagination. We also are able to transmit (or offer) knowledge and understanding previously gained, to our fellows, who may use, adapt or further evolve it. The awareness that we are born creative is far from new: relatively recently (1758), Carl Linnaeus denoted humans as *homo sapiens*: humans who seek to know. And we have plenty of evidence of this from forebears born seeking to know here is a brief reminderⁱ:

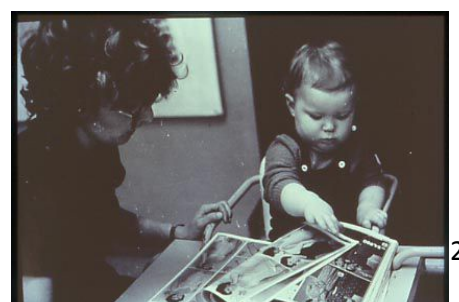
László Varga, the internationally recognized palaeontologist, found a small artifact made of carved limestone, at Bodrogkeresztúr-Henye, Hungary, in 1963. He dated it as about 27,000 years old, and his enduring hypothesis is that it is a notation of a lunar calendar.



Who are you? Who am I? Why? What's happening? These child-like questions come from the core of our being. They are expressed by the new-born child (see Prof. Colwyn Trevarthen e.g. 'The strange human urge to shape and share fantasies of action and experience is with us from birth. It is innate, not acquired, but must grow in company'ⁱⁱ), by the adult artist (I still see myself as a child by that I mean I have the curiosity of a child, which I really want to hang on to, because you just want that imagination to fly in every direction; and that's how I need to be. I need to look at something and think 'what do I want to be exploring with this?' and just let that imagination go' reflected the percussionist Dame Evelyn Glennie during a 2015 interview); and scientist (I don't know what I may seem to the world. But to myself I seem to have been only like a boy playing on the seashore and diverting myself in now and then finding a smoother pebble or prettier shell than ordinary, whilst the great ocean of truth lay all undiscovered before me', reflected Isaac Newton, shortly before his death in 1727ⁱⁱⁱ).

And every day children demonstrate their sapience

Here is Laura, an eleven month child, sitting with her educator at nursery, after eating. Eluccia, the educator, offers her a catalogue to flip through:



Look at how she next engages.



Prompted by the subtle offering of Eluccia, who has responded to Laura's evident interest in the picture of the watch, Laura listens, thinks, and makes an imaginative leap between two worlds of perception^{iv}. This everyday occurrence, seen with eyes open to innate human inventiveness, not only reminds us of the fact, but can help us construct education.

From a broad survey of experiences such as these – our own experiences, those of others – we have synthesised and settled on this principle from which to shape educational practice:

Children are rich in curiosity, competence and potential. They are innately sociable and seek exchanges.

Their desire and predisposition to be curious, to enquire, to hypothesise, to interpret and make sense of their experiences, to be in relationship, are basic human characteristics.

Our curiosity is mediated through the windows of all our senses, of hearing, touch, movement, sight, taste, feeling, operating together, and through these we have created the languages of expression to understand, to communicate. We are not only innately sapient, curious learners, we are embodied we learn through all our senses, and we naturally express ourselves through all our senses.

What is education for?

So, thinking about the learners that we have all met, read about and are, what basic definition of the word 'education' should we choose? Here is another question to consider, if you are to get to yours: what actually, *is* education? Despite its roots in the Greek *educere*^v - to draw out – there is a strong commonplace idea that education = instruction. The situation is discussed very ably by M.K. Smith in a recent online paper: *What is education? A definition and discussion*^{vi}. And therefore the active role lays in those 'educating' to be effective in instructing the 'unlearned ignorant' who are to be 'filled with information'. In England, the 1856 Factories Act set the scene for this very powerfully, with children in rows being instructed, via a monitor system, in 'basic skills' and as young as possible so that they could be set to work in the factories (a powerful and historic example of education conflated with economy and industrial wealth!) It is an extremely strong and industrial idea, and, as you know well, it dominates in the political sphere despite nearly all educators, to say the least, questioning it. And, to dip into another of your posed questions ('How well does the current educational system perform?'), it creates great unhappiness, disappointment and despair amongst the recipients of it. Sir Ken Robinson discusses it in his famous 2008 RSA talk '[Changing Educational Paradigms](#)'^{vii} It is so heartening, therefore, that the fundamental enquiry into the nature and purpose of education is finally being entertained within the walls of Westminster.

Education is for learners: humans who are eager to enquire into the world, to engage in it. We don't need to get confused about 'disenchanted' or 'unwilling' learners: they are the products of unhappy encounters with unhappy systems which treat them abysmally. Your enquiry is a beacon of hope to children now and in the future that their experience of education can be different.

Education is the creative process of exchange and relationship with the world, ourselves, and others. The task of educators is to support and encourage children's exploration and understanding. The acquisition of skills is not in itself an aim of education. Skills grow in the course of children's engagement in their learning, their relationships and their meaning-making.

This tenet, learnt, imagined, re-learnt through observation and understanding is our second grounding principle. It is at odds with the instructional principle at the heart of current mainstream educational practice, but rigorously and thoroughly developed, we are seeing outstanding results, in 'normal' places with 'normal' children. We have seen educators, disheartened educators managing unhappy children in rather grim relentless instructional programmes (ironically designed to 'raise standards') transforming their classes into happy places of eager, meaningful learning.

What should education look like?

We now want to bring some real children into your enquiry. The example which follows is from a chapter in our book 'Learning to Learn in Nature'ⁱⁱⁱ, describing children's real energetic encounters, and the educational choices that have been made by their educators in constructing around these children what we term 'an environment of enquiry'. The educational environment offered in this example involves real contexts for the children to enquire and engage with, an ability of the educators to 'see into' the excitement of the children's enquiries (as Eluccia did in responding to Laura's unspoken enquiry about the watch). It involves questioning and 'provoking' the children, with carefully selected media to help them go into their explorations. In the course of it they become transformed learners.

It is the reception class of a North Tyneside School. Sarah Hollywood is the main classroom teacher; Catherine Reding and Annette Poulson are additional Sightlines Initiative educators supporting the teachers in seeing educational potential and creating new educational environments. Catherine presents and narrates:

Motorbikes & Bears

The woods to which we took the children from the reception class at New York Primary School were very large, with steep muddy hills, a stream and many other exciting features. So that the children could explore these different places and not be constrained to staying near the central camp, we developed a system of dividing the class into groups at the beginning of each session. These groups were negotiated between the children and the adults, depending on what the interests of the children were and what was organisationally possible. The class would spend the whole morning in these groups, using whichever part of the woods they chose.

A new group begins

One morning in the woods we were deciding on the groupings for the session, and had found that there were a number of boys who weren't decided on what they wanted to do. They were Steven, Kieron, Kie, Adam, Macauley, Christopher and Ethan. We decided that they could form a group together, and I would be the adult to work with them.

During a recent educators' meeting we had been discussing the learning and dispositions of some of these children. We had noticed that they tended to approach activities with great speed and energy, often moving from one thing to another very quickly, but not becoming absorbed in what they were supposed to be doing. We felt that it would be beneficial for them to be engaged in some group activities with a sense of shared purpose. We thought that this would encourage social interaction and enable deeper learning to take place.

Working together to develop an idea

That morning in the woods I decided to offer an initial idea and see how the children responded. I suggested that we could collect some large sticks and build something together. All the children seemed excited by this idea, and we worked together to find and move large sticks back towards the central camp area. Later Sarah told us that previously in school these children did not gel together as a group. Once we had a large pile of sticks I asked the children what they would like to do with them. Steven said, 'build a motorbike' and, after some discussion, it was agreed amongst the group that they would build a motorbike together.

During the rest of the morning the boys made three motorbikes from the logs and sticks they had collected, and their play was centred around driving and riding on the bikes. I noticed that their positioning on the bikes was important - the front boy was the 'driver' which was a very sought-after role. At lunch time I told other staff about the activities of what we started to call the 'motorbike group'. We were very keen for the boys to continue developing this new focus and their sense of being a group, so we decided to offer them the opportunity to continue their work together that afternoon in school.



Back in the classroom



After lunch we encouraged the boys to tell the whole class what they had been doing, and proposed to the group that they could recreate their motorbikes with sticks and clay. We made small stand-up cards so that the children could draw themselves and put themselves on the motorbikes.

All the children were very keen to make the motorbikes. Rather than making them collaboratively as they had done in the woods, the boys mostly found it preferable to make their own individual motorbikes. Kie and Ethan were the only two to make a shared motorbike. Even though they worked on separate models, the boys were still acting as a 'group' side by side and with a shared purpose and interest.

Motorbike talk – an emphasis on movement and speed

Watching the group at work I noted down some of their comments about the motorbikes they were building. Kieran told me, ‘That’s my engine.’ Christopher showed me the different sticks he had used: ‘That one makes it go faster. That one makes it go flying.’ Adam added a stick to his motorbike, and said ‘That’s so it goes faster.’ He was really proud of his motorbike and took it with him when he went to read with one of the year six children.

Steven used a small piece of clay with lots of sticks stuck vertically into it to make his motorbike. The different sticks had different functions. He told me, ‘This one makes it go speedy. This one makes it go flying. This one’s the backwards flying stick.’ Kie asked if they could paint the motorbikes. Once the paint was available, all the children wanted to use it; this added some extra focus and excitement to their work. Ethan and Kie continued to work together on their large motorbike.

Kie: Isn’t ours good?

Ethan: Yeah

I asked the boys where their motorbikes were going to, but this didn’t seem to interest them. When I asked them how it felt to be on a motorbike, they had lots of ideas:

Christopher: Fast

Steven: It feels weird when I’m driving backwards. It feels fun when I’m driving fast.

The speed and feelings of driving a motorbike seemed to be a large part of the attraction for the children. On previous occasions Sarah remembered chasing through the woods at great speed with a group who we called ‘the fast group’ including many of these children. They wanted to explore the woods with great speed and energy. We noted that in settling for longer, far from losing their connection with speed and movement, they were able to go deeper into their explorations - through mechanics (the levers), imagination (driving backwards) and extraordinariness (flying).

The group stayed with the activity for the whole afternoon. Sarah, the class teacher, was delighted at the way the children had stayed with this group focus for the whole day, as it was usual for these children to flit from activity to activity. During the following week Sarah gave the boys lots of time to play with their model motorbikes together in class, which they did - until they fell to pieces!

Keeping the focus

Maintaining and developing the interest of the motorbike group was our priority for the next woods session. The day before going back to the woods, Sarah talked to the boys about continuing with their motorbike work, so that they had this in mind when they arrived. Together we went back to where the children had built the motorbikes the previous week. When we arrived, the children found that one of the bikes - Christopher’s - had been broken into tiny pieces.

This prompted a lot of excitement and discussion. I asked the children, "What do you think has happened?" and wrote down their ideas:

Steven: A monster dog came and smashed it.

Alex: A dog with its really sharp teeth must have come over. It must have bited it really hard. It must have been crying 'cos his teeth must have been hurting off the hard stuff, and his teeth must have fell out.

Kie: A dragon fired it down.

Kieron: I think I know. I think a dog must have scratched it and then it bited it.

Steven: A dog must have stood on it.

Kieron: A dog must have put his teeth on it.

Christopher: Or the monsters might have broken it.

McAuley: Someone - a man - must have come and had a knife and chopped it down.

Alex: He might have chopped it with his axe.

Kieron: He might have chopped all the bits as well. He has, look!

Welcoming the drama

Although I felt sorry that something so special to the children had been destroyed I was delighted that it had promoted such an excited and imaginative response. An unexpected event had changed the focus of the group, from building and playing on the motorbikes, to the drama of imagining something unknown, strong and powerful, that destroyed things and put the boys and the woods in danger. The boys' conversations about the bear continued into the morning, and became even more vivid. Christopher, Alex and Kieran were in a den next to the motorbikes, talking together.

Christopher: A bear broken my motorbike then I had to fix it back together.

Alex: He waited until it was bedtime and then the bear came over and broke Christopher's motorbike. And then in the morning we came into the woods and we said, "WHY DID THE BEAR BREAK THE MOTORBIKE?"

Catherine: Where did the bear go?

Kieran: Living in a big tree.

Alex: No, he had a really fast motorbike.

Kieran: He'll go in a hole. He'll dig a hole then he'll stay in the big hole then he'll bury it up. It's under here!

Alex: Under the tree over there?

Kieran: It's under here!

Alex: It's under me?

Kieran: Yes, under all of us.

Steven: I'm getting out now!

Alex: I'm getting out! I don't like it.

Christopher: I like it.

Catherine: I wonder what the bear's doing right now?

Kieran: I know. It's smelling me and it's smelling Christopher.

Christopher, to Kieran: And you!

Kieran: No it's not! 'Cos it's my pet. My pet bear. The bear is on you. The bear is digging under you, and he's going to scratch your bum!

Scary creatures and new stories

The idea of a bear living in the woods was not a new one for these children. Back in January, three months earlier, Annette had worked with a group exploring the woods who were looking for bears, lions and monsters. Christopher, Kieran and Kie had all been part of this group. Maddie had found a tree stump with holes, showing where bears lived underground.



Christopher poked a stick into the tunnels, and a lion bit Ella's stick when she put it in a hole. Kieran found a tree with a bear's scratch mark on it, and Faye found a 'monster's hand' coming out of the



ground. Back in the classroom Faye used the overhead projector to make her bear huge. There was already an exploration of rich scary stories amongst the class, to which the motorbike boys could add a new, first-hand, dramatic story.

Telling the story through music and drama

The day that we found the broken motorbike was an all-day session in the woods. Over lunch-time we played musical instruments and danced with the whole class, something that we often did as a large group. We also gave children the opportunity to share exciting stories and events from the morning. The motorbike group were very keen to tell the rest of the children what had happened, and the story of the bear destroying the motorbike was retold with great animation. Now these boys were the focus of attention for the whole class, telling of their brave deeds in the face of the bear.

We offered the motorbike group the opportunity to gather again in the afternoon. Christopher, Alex and Kie were keen to continue, along with Danny, Ella, Beth and Lewis who had heard about

what was going on and were interested in being involved. They had all explored the possibility of bears and other scary creatures in the woods in the past.

One of the boys asked if they could play the musical instruments again. I thought this would be a good opportunity to develop children's expression of their ideas about the bear using music. We got out the percussion instruments we had brought (various hardwearing instruments that were robust enough to cope with damp and muddy conditions) and I got out my violin.

The children quickly began to explore how they could dramatise the story of the bear and the motorbike. Alex said, "Me and Christopher are the bears walking." I asked what kind of music they would need for this. Alex sang what he wanted to be played, which I interpreted on the violin, joined by the other children on the instruments they had chosen. "And for the bear biting!" said Christopher, who sang a faster tune, all on one note, while jumping energetically. I invited the group to try out the two different musical ideas. Christopher and Alex became the bears walking, then fiercely gnashing the motorbike, while myself and the other children played the music. Looking back at the video later, we noticed how the children playing instruments were really listening and playing in time, and how expressive the faces and bodies of Christopher and Alex were as the bears.



After a few minutes, Alex suggested "How about we do it over there?" pointing to where the motorbikes were, "to pretend we are really doing it." Beth added, "Yeah, and we can do a real walk." Over at the motorbikes, Beth, Christopher and Alex organised the group and the adults stood back and watched.

Beth: The ones with the instruments stay here; the bears stay there.

Alex: No, we have to walk all the way over there.

Christopher: Yeah, then turn.

Beth (to Alex and Christopher): But you two, you hide from weh.

Alex: No we don't.

Christopher: Yeah we do, don't we go that way, don't we Alex?

Beth: We hide from you.

Christopher (to Alex): You go there; I'll go along round there.

Beth: Don't bears hide from people?

Alex: Yeah they do. Only when it's night-time, they come out. So pretend it's bed-time. Right, the people can go behind there.

Christopher: Yeah, so the bears don't eat them.

Alex: If you stay there we'll bite you!

Deepening collaboration

Together the group acted out the drama of the bears eating the motorbike, with the music expressing the bears' actions. There was a real sense of engagement and ownership of both the story and its expression in drama and music, that was captivating to watch. During the afternoon the children repeated the drama over and over again, with different children becoming the musicians and the bears. Eventually there was just Kie left as the drummer with me on the violin, and everyone else was being a bear. Particular children were taking on roles suited to their interests and dispositions (for example, Alex and Christopher leading the drama, and Kie drumming). They were organising themselves and listening to one another, and were totally absorbed in what they were doing.



Looking back to the beginning of the year, many of these children had not been focussing for long periods of time on anything, so this was a very significant change. The drama they had authored had real meaning for them, stemming from the motorbikes they had created, played with and then found destroyed.

Bear drawings & the drama of representation

Back in school that afternoon we suggested to Alex and Christopher that they could draw the bear.

We wanted to find out more about their ideas, and why the bear character was so important to them. They worked together all afternoon on their drawing. They carefully drew pointed teeth and 'blood' on his face, and meticulously coloured the whole picture in, then signed their picture & a full witness statement by the people who had seen the bear. We were struck by the level of care and attention that went into the drawing, and the length of time that the boys spent on it. After he had drawn each spot of blood, Alex took a black pen and carefully outlined every single spot. Alex and Christopher loved their bear. The picture showed the bear fierce and bloody, as if he had been in a fight. This fierce creature which the boys were initially so angry with for destroying their



motorbike was now being depicted with intense care and respect.

We discovered that these children, some of whom had not previously engaged deeply in classroom activities, could in fact work together on a shared enquiry over many weeks. The nature of what was being explored – speed, power, fierceness, danger – fascinated them, and drove them to continue, along with our acknowledgement and encouragement. The initial offer of clay and sticks to recreate their motorbikes helped to form and build on the idea that they were a group, were doing something special together, and that we valued them. We were able to re-present the children's work back to them for discussion, give them opportunities to be together as a group, and offer new forms of expression, such as music. We were active participants and co-explorers, for example when I played my violin with them in the woods.

Through working with this group we learnt some valuable lessons: about the persistence shown by the children, the need for applied thinking by the adults, and the value of using different forms of expressive media.

Researchfulness, and other qualities in education

In the preceding narrative of the boys' encounter with motorbikes and bears we've chosen to keep the children's experiences to the fore. Vital to their experience, however, are the pedagogical characteristics of adults listening hard to the signs of children's interest, and taking them seriously, of themselves wanting to know and understand more; of giving time, space and attention, in the classroom and outside it, for the boys to become a group exploring together their ideas, through discussion, employing media of drawing, sculpture, talk, drama, music. In choosing and finding ways to re-construct the classroom and the curriculum, the teachers discovered that these children were full of curiosity, eagerness, vitality, fun, and eager to exchange ideas. We discovered rich, sociable, competent, creative children; we learned something about how to (and the benefits of) observing, listening and discussing together as a vital strategy for teachers, and the school learnt how it could reframe its classrooms to become studios of enquiry. By focussing on the children's sense of fascinated curiosity, the educators discovered that the children flowed naturally into absorption with their subject: By the end of the year, a class which had been big and boisterous became gelled as a unit, and engaged in learning. As educators, we developed our approach to focus on extending children's thinking and ideas. By giving the children the opportunity and freedom to follow their own interests, they developed their 'stickability', and sharing their interests with others also developed the children's personal and social skills. Children who were normally quite reserved and quiet in the class became leaders, boisterous children became listeners, and all became managers of their shared learning and development. They became a class of sustained thinkers, who adapted their thinking to embrace challenges, persisting when they found things difficult. Whilst in the woods they were free to explore, develop their awareness and management of their own risks and competences, and back in the classroom they developed their resilience and persistence, something which we had not previously seen (Sarah Hollywood, in *Learning to Learn in Nature*).

Whether or not you are or have been an educator, we think that you will be able to extrapolate the principles of pedagogy (the science and craft of teaching) to these experiences, discern the methodology which was developed, and the learning which the children experienced: the

experiences of education are close to everyone's heart. We continue to explore the potential of these principles enacted in mainstream education. Following the two principles which we introduced earlier to you, we have derived three others:

All human beings are innately sociable, and so effective learning environments must be characterised by opportunities for sociability. Encouraging children engaged in explorations and shared interests to form small learning groups is a key pedagogical strategy.

Listening and exchange are also important activities in our pedagogical practice, and regular analytic reflection by educators in small groups is a necessity. The practice of observation, as a way of trying to see and understand what children are doing and thinking, accompanied by reflection and analysis, enables educators to work with the grain of children's learning.

Our educational work stems from engagement in, and imaginative exploration of, the natural world. Moving indoors, we see the school environment as a studio for the exploration and exchange of ideas, a place where children can bring all of their senses to the business of learning, and use all their expressive languages to make their learning visible.

You will have seen these principles in action, we hope, in the 'Motorbikes & Bears' experience. We have four qualities which represent a good deal of the ways of developing educational work under these principles: Encounter, Enquiry, Exchange, Expression - the 4E's. And the work of continuous pedagogical formation which goes into the making of educational places with these qualities, we call *Developing Environments of Enquiry*.

These principles and methodologies, developed here in the context of Foundation Stage Education, can equally be developed with learners of any age. The reasons that they are currently in scant evidence are bound up in issues to do with fear of failure, inexperience and lack of encouragement. And, sorry to say, educators' fears have been openly fuelled by actions from government sources. Schools and educators have been centrally directed, especially since the dissolution of the QCA, into becoming programme deliverers, and discouraged from pedagogical innovation. Your enquiry can open the door to a more encouraging prospect for educators and children. Although in your launch, you've talked about the possibilities of education 'providing' and 'preparing', do please think about education as the place where born learners can really immerse themselves in learning.

Sometime in the 1980's the notable educator Loris Malaguzzi^{ix} penned the poem; the Hundred Languages of Children: here it is. It contains a message of strength, not just regretting a betrayal of potential, but staking a claim for the

The child is made of one hundred.
The child has
a hundred languages
a hundred hands
a hundred thoughts
a hundred ways of thinking
of playing, of speaking.

A hundred.

Always a hundred
ways of listening
of marvelling, of loving
a hundred joys
for singing and understanding
a hundred worlds
to discover
a hundred worlds
to invent
a hundred worlds
to dream.

The child has
a hundred languages
(and a hundred hundred hundred
more)
but they steal ninety-nine.
The school and the culture
separate the head from the body.
They tell the child:
to think without hands
to do without head
to listen and not to speak
to understand without joy
to love and to marvel
only at Easter and at Christmas.

They tell the child:
to discover the world already
there
and of the hundred
they steal ninety-nine.

They tell the child:
that work and play
reality and fantasy
science and imagination
sky and earth
reason and dream
are things
that do not belong together.

And thus they tell the child
that the hundred is not there.
The child says:
No way. The hundred is there.

Loris Malaguzzi

possible. Your enquiry also stakes a claim for the possible.

Measuring and assessing: a note

All of the situations in which we have worked with educators to develop these principles and methodologies have been subject to the usual statutory scrutinies, and applications of standardised assessments. It is a typical experience that, even using the current measures, there is a noticeable increase in attainment, in comparison with previous years, or similar classes. Unfortunately, the current measures do not recognise what is at least equal to the importance of 'core competencies' which are given dominance: that is the actual, real engagement in the learning experience by all concerned. If you want to be able to say 'we have truly succeeded in giving children in England a delight in being at school, in learning and in wanting to go on learning, in investigating, sharing and developing their ideas, in listening and being listened to', then I would say that not only do your existing measure and assessments not do this, but they actively act against this likelihood. There are however, ways of assessing education in order to do this, *and* to gain a knowledge of the technical competences which the children have gained along the way. Look towards the likes of the Leuven Scales developed by Professor Ferre Laevers, which looks broadly at a broad spectrum of educational experience, and has the capacity to not only map the children's achievements, but also the 'intelligence' of the educational practice.

You ask, I think, how does the current educational system perform against these measures? I think that this would be a useful study, although we would rather see the money spent on actually supporting the development of education actually geared to 'earnacy' (Prof Guy Claxton's phrase^x). Even without undertaking such a study (although I think that the Sutton Trust may have undertaken something in this vein already), I would be happy to bet that the current 'system' (regime?) would do particularly badly. Certainly the numbers of young teachers leaving the profession, heads retiring early, the amount of depression and indeed suicide attests to something deeply unhappy. Certainly anecdotally we can see plenty of alienated children in educational environments which are based on 'industrial instruction' and engaged, lively, learning children in places such as we have described and are endeavouring to create.

ⁱ Vortés, L. (1965) 'Lunar Calendar' from the Hungarian Upper Paleolithic. *Science* vol. 149. 20 August. pp. 855-856.

ⁱⁱ in *Human Nature, Early Experience and the Environment of Evolutionary Adaptedness*. Edited by Darcia Narvaez, Jaak Panksepp, Allan Schore, Tracy Gleason. Oxford University Press, 2011

ⁱⁱⁱ Brewster's *Memoirs of Newton*. Vol. ii. Chap. xxvii. In John Bartlett (1820-1905). *Familiar Quotations*, 10th ed. 1919.

^{iv} *Story of Laura* 1983 Quaderni Reggiani, Reggio Emilia. Reprinted in *The Diary of Laura* Redleaf Press 2009

^v <https://en.wiktionary.org/wiki/educere>

^{vi} Smith, M. K. (2015). *What is education? A definition and discussion*. The encyclopaedia of informal education. [<http://infed.org/mobi/what-is-education-a-definition-and-discussion>]

^{vii} RSA 16 June 2008, also online in [illustrated form](#) . Also see 'All Our Futures' Select Committee on Education Report 1999

^{viii} *Learning to Learn in Nature: Sightlines Initiative* 2014

^{ix} *The Hundred Languages of Children*, Gandini, Forman Edwards. Ablex 1995

^x *What's the Point of Education?* Oneworld Publications 2008