

Developing self-confidence through the transformation of evaluation practices

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Abstract: Self-confidence is the driving force behind learning. But does it not also underlie the ability to make strong and courageous decisions when faced with various challenges? With the aim to provide an education for sustainable development and ecological transition, or even an education on the state of our planet, to what extent do academic evaluation systems prevent pupils from developing the self-esteem they need to face current problems calmly and take an active role in dealing with them? This article proposes practical approaches for setting up an evaluation system that is based on a teacher-pupil dialogue and provides pupils with the opportunity to work on their cognitive, metacognitive and emotional skills.

Keywords: self-confidence, evaluation, education for sustainable development, emotional skills, metacognition.

Introduction

An individual must have had the opportunity to develop self-confidence and confidence in his or her ability to learn and take action in order to propose technological innovations that favour ecological transition, to engage in actions that aim to combat the climate crisis, to assert his or her values or even to oppose a political or economic system. However, statistics show that young people in France who are climate activists are largely from affluent middle-class backgrounds. According to de Cabanes (2019), "72% of them have at least one parent who holds a managerial position or a position in a high-level intellectual profession"¹. Therefore, these characteristics were not developed at school, but in the family environment or outside of school. If we consider that education for sustainable development has been included in school curricula for more than a decade in France, these statistics indicate that instruction on the topic has failed. Indeed, if this were not the case, all pupils – or at least most of them and, above all, pupils from all socio-cultural backgrounds – should have the necessary skills to react when faced with a challenge requiring change at all levels, from the supranational to the individual level. However, beyond this lack of representativeness, several questions remain unanswered. What skills should these young people acquire? How can these skills be defined and developed? And what is the desired outcome?

Skills needed by pupils in the 21st century

We can distinguish between several types of skill. To avoid limiting ourselves to country-level skill requirements, our considerations are based on the competences set out by two supranational bodies which might, a priori, seem to have contradictory goals. These are the ten competences defined by the World Economic Forum (WEF) for 2020 and the competences defined in the UNESCO guidelines for its 2030 Education Programme.

¹ <https://theconversation.com/ces-trois-jeunes-qui-se-mobilisent-pour-le-climat-113297>

Table 1: Competences for the 21st century according to WEF and UNESCO

Typology of competences	World Economic Forum	UNESCO Education 2030
Logical thinking and mathematical competences	Solving complex problems	Analysing and solving problems
		Taking initiative
Creativity	Being creative	Being creative, ingenious, curious
	Demonstrating cognitive flexibility	Perseverance
Emotional / relational competences	People management	High-level interpersonal and social competences
	Negotiation competences	Tolerance, respect
	Coordinating with others	Collaborating
	Demonstrating emotional intelligence	Empathy
	Service orientation (recognition of other people's needs in order to respond to them as well as possible)	Development of the competences, values and attitudes needed to lead a healthy and fulfilling life
Mixed competences – requiring several of the previous competences	Judgement and decision-making	Making informed decisions
	Critical thinking	Critical thinking

We can already draw some surprising conclusions from this comparison. Although the vocabulary used is not always identical, the competences are very similar, and they are classified in the same categories as we defined previously (Pellaud, Bassin, Blandenier, & Massiot, 2019). However, even more surprisingly, emotional and interpersonal skills make up half of all the skills put together. "Collaboration" has become an indispensable competence since socio-constructivism and theories of conceptual change found their way into the classroom and were recognized as the theoretical bases for the act of learning. However, few "methods" have been proposed to ensure that this ability to collaborate is fostered in the best possible conditions and, above all, to ensure that pupils acquire all the other emotional and interpersonal competences in the table.

These emotional competences are also considered to be important by educators. During our training sessions, we interviewed about 100 teachers from four classes² in order to find out what "attributes" 21st century pupils need so that they can face the complexity of today's world. Once the "attributes" had been defined (by grade), they were asked to evaluate what their current school was doing to develop these attributes. Their evaluation was based on the following scores: a lot (++), a little (+), very little (-) and nothing at all (--) or even the school was considered to undermine the development of this attribute. A score of 0 meant that the school did not do anything specific to foster the development of this "attribute" but did not implement practices that hindered it either. We noted 0/+ or -/0 when pupils had too much difficulty categorizing accurately. Because the classes did not necessarily evaluate the same "attributes", some boxes are not completed in the table below.

² This survey was conducted in Switzerland in 2019 on students in a Master's class on special education – the participants were already practising teachers (Grade 1) – and on three Bachelor's classes who were completing their initial training as primary school educators.

Table 2: "Attributes" that 21st century pupils should possess

Typology	The 21st century pupil should be capable of:	Gr.1	Gr.2	Gr.3	Gr.4
Logical thinking and mathematical skills	working autonomously	0	-	-	+
Creativity	adapting, flexibility	+	+		-
	curiosity	0	+	+	-
Emotional / relational competences	collaborating/cooperating	0/+		+	+
	respecting others / tolerance	+	+		+
	personal commitment/responsibility	-/0	-	+	+
Mixed competences	critical thinking	-	-	-	0
	using all of his or her skills/self-knowledge/cognitive flexibility/reflexivity	--	-	+	-

It should also be noted that creativity was only mentioned spontaneously for Grade 1, with the school's involvement in its development being evaluated as "not at all (--)". The researcher prompted the other three grades, asking them to evaluate the role of creativity. The following is a summary of their evaluation:

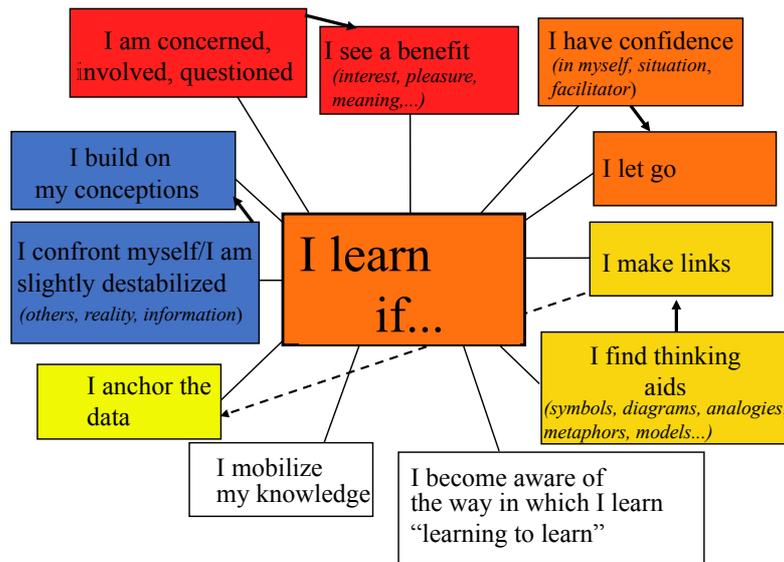
Creativity	Creative, open-minded	--	-	--	-/0
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Two grades observed that what schools do best is to develop conformity, a respect for rules and produce "good consumers", although these characteristics were not identified as being among the "attributes" that 21st century pupils should possess by the survey participants. As in the first table, we can see that emotional skills play a key role, but that the school system does not seem to pay particular attention to developing them. If emotional skills are indeed developed in schools, it is often solely in the context of collaboration required by the curricula, where pupils necessarily have to show respect for others and tolerance.

A major gap...

Self-confidence does not feature in these tables. Only one grade in our survey mentioned it and negatively evaluated the role of the school in fostering its development. As for the competences set out by WEF and UNESCO, it can of course be argued that self-confidence underpins all the other competences, because without it the very foundation of learning is jeopardized. Is it enough not to mention it or to consider that is acquired "by default"? According to the scientific literature, this is not the case. Psychologists and educational specialists agree that self-confidence has to be built, and building pupils' self-confidence should be a clearly defined goal for teachers. For this reason, it is part of the didactic environment proposed by Giordan and Pellaud (2008). Their vision is that the development of self-confidence constitutes an essential foundation for all learning. It enables pupils to "let go" of their previous knowledge and gives them the courage to change their conceptions. It also plays a key role in the way in which pupils deal with confrontations and destabilization, both factors that are inherent to constructivist and, to an even greater extent, socio-constructivist teaching methods, where cognitive conflicts constitute an essential component of learning. But what exactly is the role of the teacher in the development of this crucial aspect – pupils' self-confidence? On what elements or moments should teachers focus their attention in order to foster pupils' self-esteem to such an extent that, in turn, pupils build genuine self-confidence?

Figure 1: Environment Conducive to Learning



Source: Giordan, Pelland (2008)

The role of trust in the school system

“A trust-based philosophy is one of the distinctive features of the Finnish education system, which manifests itself in the way the system functions, like a culture. In addition to trusting an individual’s ability to learn, trust is also reflected by the way the system functions. There are few control mechanisms, such as inspections or high-stakes pupil evaluations. (...) Teachers strive to guide and support their pupils, encouraging them to build on their own strengths and personal motivation to learn better. (...) Trust as a guiding principle of the education system requires teachers to be able to act independently, to take responsibility and collaborate with other partners”. (Halinen, Niemi & Toom, 2016, 147-148). French-speaking schools – characterized by numerous summative evaluations, examinations, student graduations and students having to repeat grades – are a long way from providing an ideal trust-based environment. Therefore, it is necessary to work with these parameters in order to adopt a philosophical vision of school that allows us to incorporate what we define as "islands" for building self-confidence into instruction. So, what might these "islands" be made up of?

With its emphasis on the importance of benevolence, positive psychology, which is very much in vogue today, highlights three fundamental psychological needs: *“The first psychological need is a **feeling of autonomy**. This concept refers to the feeling of being at the origin of one’s choices and actions or, if this is not the case, feeling that the actions one is asked to do are aligned with one’s individual values. Thus, for pupils to be motivated and feel a sense of academic well-being, it is important that they understand the meaning, the interest and the usefulness of what is offered in the school setting. (...) The second psychological need is a **feeling of competence**. This concept refers to the feeling of being able to cope with the demands of the task at hand. (...) The third psychological need is that of **social closeness**. (...) For example, when a child feels accepted and appreciated by his or her teacher and/or peers, this helps fulfil the child’s need for social closeness, thus promoting motivation, commitment and academic well-being”.* (Shankland, Bressoud, Tessier & Gay, 2018, 3-4).

The second point described by the authors as part of the Theory of Self-Determination is similar to the concept of *flow* developed by Csikszentmihalyi (2004), which emphasizes both the importance of the requirements of the respective task being aligned with the pupil's capabilities as well as the importance of the task arousing the pupil's interest. If the latter point is fulfilled, the pupil does not need an external reward as an incentive because the experience of doing the task is in itself intrinsically rewarding (Shankland, Gay & Bressoud, 2017).

Based on these basic needs, we can deduct the fundamental attitudes that a teacher should develop. In addition, we extracted the points that recur most frequently from the extensive body of research on this subject³.

Listening attentively and appreciating. This involves taking the time to genuinely listen to pupils, taking an interest in them, in their difficulties, and in what motivates and fascinates them as well as appreciating their results. This time devoted to the pupil and the appreciation must be sincere and given without a feeling of regret. Appreciation should not be limited to praising what the pupil has produced but consider the progress the pupil has made and his or her potential. Because pupils cannot be duped. If they see that their work is appreciated regardless of the result presented, they will quickly understand that this fails to acknowledge the final result of the work, but only focuses on the fact that it has been completed.

The role of errors. Neuroscience and cognitive psychology, especially Dehaene's latest research (2019), support what many authors before Dehaene found: "*an error is a piece of information, not a mistake*" (Favre, 2015, 95). Errors provide information on a pupil's way of thinking, on his or her modes of reasoning and his or her conceptions. Moreover, Dehaene (2018, 266) states: "*To make a mistake is to learn.*" He goes a step further, quoting the philosopher Alain (1932, 265): "*One should learn to make mistakes in a good mood. (...) Thinking is going from mistake to mistake*". When errors are given a positive status, the pupil can make progress by using errors as a tool or as a springboard to advance even further. In addition, the educator refrains from associating the child with his or her error but takes an interest in what led the child to produce the error in order to find the best way(s) to correct it. These practices are already accepted but not yet sufficiently established.

Evaluation. Having reflected on errors, the next logical step is to consider evaluation. The prevailing system of summative evaluation is only suitable for students who have already gained some self-confidence. To develop self-confidence, formative evaluation, as described by Scriven (1967) needs to be implemented. This type of evaluation does not involve awarding grades to pupils; it should be identified by the pupil as the best time to understand his or her errors and find ways of remedying them. In many cases, a formative evaluation is presented only as a test to verify that the pupil has learned the respective topic and is conducted prior to a summative evaluation. In such a situation, a pupil who has "performed well" in his or her formative evaluation is very frustrated when he or she is still subjected to a summative assessment. If it is well designed, an evaluation is an important moment for monitoring one's own progress and setting oneself additional challenges or additional goals to stimulate further progress. Of course, with a view to building self-esteem, it is imperative that "class averages" and comparisons with the results of others are eliminated in order to prevent "the shame of having failed" – a feeling that undermines the building of confidence in oneself or in others. Ideally, as is the case in Finland, pupils should

³ We offer a compilation of several authors which we consulted; the references are provided in the bibliography.

be able to test their competences when they feel ready to do so and not according to a pre-established programme, a class evaluation or benchmark⁴ evaluation set at a specific time in the school year.

Metacognition. Metacognition is characterized by two complementary aspects. The first aspect is the ability to identify what the pupil knows and what he or she does not know, what he or she has learned and what he or she has not yet understood. The second aspect is more subtle and is based on having determined the first. It goes beyond identifying what a pupil has learned and involves also identifying the cognitive strategies that enabled him or her to acquire his or her knowledge or competence.

Self-evaluation and formative evaluation: the keys to developing self-confidence?

Based on the theory described above, we have developed resources⁵ that foster an evaluative approach which incorporates a dialogue on the pupil's self-evaluation and an evaluation of competences performed by the teacher. Taken separately, these two types of evaluation already have merit; however, by fostering a pupil-teacher dialogue, they provide the opportunity to truly build pupils' self-confidence. This is supported by Bressoud, Bétrisey and Gay (2019, 13) who stated that, "the consistent synthesis work conducted by John Hattie (2009) reveals that the two indicators that are most conducive to learning are the relationship of trust between the teacher and pupil and the quality of feedback provided by the teacher to the pupil". This dialogue allows a comparison between the teacher's and pupil's perception of the pupil's work, giving rise to mutual respect and trust.

More specifically, pupils are instructed on the learning objectives that the proposed exercises should enable them to achieve with the goal of giving them a feeling of autonomy. The next step, conventionally, is that pupils complete the exercises. Finally, pupils are required to perform a self-evaluation, in which they assess, on the one hand, the feeling of ease they experienced during the exercise and, on the other hand, they describe potential difficulties and how they suggest overcoming them.

⁴ In Switzerland, cantonal benchmark tests are regularly imposed on students. They aim at harmonizing requirements in order to ensure that pupils are treated equally (state of VD), but also at "*taking stock of the knowledge and competences acquired with a view to making decisions related to graduation, orientation or certification.*" (Admée, 2008)

⁵ These resources are available free of charge to teachers and their students at: <https://blog.hepfr.ch/transformations/>

Figure 2: Example of a worksheet from the resource: *Transformations: Who owns water?*

To understand a problem, you have to be able to estimate how serious it is. The following exercise requires you to use your mathematical knowledge.

Roughly estimate the surface area of the sea in 1960 and the surface area in 2014. What unit will you use to express these values?

In 1960, the area was.....

In 2014, the area was

Therefore, what percentage of the sea has disappeared?

Knowing that the sea had an average depth of 70m, what is the volume of the water that has disappeared? Explain how you will proceed and do a **rough** calculation.

On average, how many litres of water disappear in a year?

On average, how much surface area disappears in a year?

When making approximate calculations, we use what is called an "**order of magnitude**". It is very important as it helps you check whether the answers you have found with your calculations are possible (even if they are not exact).

Do you feel comfortable doing these calculations? 😊 😐 😞 🙄

If not, specify what else you need to practise.

To go further, what else would you need to know?

We propose a grid for teachers to evaluate competences, which is presented in this form:

Figure 3: Excerpt from the teacher's guide for the "*Transformations resource*": *Who does water belong to?*

Proposed evaluation of mathematical skills:

Identifying the information needed for the calculations and using it appropriately (understanding why it is being used in this way) to answer the different questions is more important than the accuracy of the answers. The observations help to pinpoint the student's difficulties and define targeted remedial measures:

Does not know which information is necessary	Knows how to find the necessary information but does not know how to use it	Knows how to find the necessary information and uses it partly correctly	Knows how to find the necessary information and uses it effectively
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The comparison between the pupil's self-evaluation and the evaluation of his or her competences by the teacher should provide a suitable basis for a dialogue, during which the teacher listens attentively and appreciates the pupil's work. By performing a self-evaluation, pupils should develop their metacognitive abilities and, in turn, a feeling of autonomy as well as a feeling of competence regarding the task at hand.

Self-confidence: the driving force behind commitment and taking action

This first step aims at building the self-confidence needed for learning. But does it enable pupils to gain enough self-confidence to make decisions and take responsibility? To achieve this, emotional competences are needed. They should lead to a "clarification of values" (Pellaud, 2011) and a "need for value" (Pellaud, Gay, 2017) which, in turn, results in them taking action.

In the excerpt from a worksheet below (Figure 4), pupils are asked to verbalize what they feel when looking at images showing massive destruction of the ocean floor. To help them express their feelings, some terms are proposed which they may or may not use. The purpose of the self-evaluation proposed to pupils next is solely to determine their ability to express their feelings and encourage them to identify any difficulties they may be experiencing.

An evaluation grid is also provided for teachers (Figure 5). As this exercise is repeated at different points of time in the project, the teacher can keep track of his or her observations regarding individual pupils and determine whether they have progressed, changed or even regressed. Of course, this is not an evaluation that leads to a grade or any other value judgement, but rather an observation that can result in the teacher seeking a dialogue with individual pupils in order to better understand their possible difficulties and, if necessary, to offer them a teaching environment that is more conducive to developing these emotional skills.

Figure 4: Excerpt from a pupil worksheet from the resource: Transformations, Oceans

If you are able to express your feelings, it helps you to communicate more calmly and to listen better to the arguments and feelings of others. It is an important skill that enables you to live better with others.

Now that you know what caused this transformation at the bottom of the ocean, how do you feel when you look at the pictures on Page 1?

You can add other words if you want or circle several of the suggested answers.

sadness	fear	amusement	injustice
incomprehension	empathy	"well done!"	rage
powerlessness	anger	nothing	horrible

Other suggestions:

.....

Can you explain your feelings?

.....

.....

.....

.....

.....

Do you find it difficult to express what you are feeling? 😊 🤔 😞 🤢

If so, can you say why?.....

Do you have any ideas of what might help you to do so?.....

Figure 5: Excerpt from the teacher's guide: "Transformations, Oceans"

Figure 5: Excerpt from the teacher's guide: "Transformations, Oceans"

Proposed evaluation of emotional skills:

Emotional intelligence involves self-awareness, awareness of one's feelings, the ability to deal with and express one's emotions. It is not innate; it is learned. The act of verbalizing the feelings that these pictures evoke can give rise to insights. The description of these feelings should not be followed by a value judgement. Pupils should identify their feelings individually. This can be kept completely personal, without the feelings being disclosed in plenum. Pupils complete the description of their feelings with a free drawing.

There are, of course, no right or wrong answers for this worksheet. It is therefore important that no value judgements are made. It must also be considered that too much feeling can be the source of cognitive non-learning. It is therefore important to take this into account.

Unable to express it	Chooses a word but cannot explain why he or she chose it	Expresses his or her feeling
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Conclusion

At the moment, we do not have sufficient experience to say whether our approach will enable us to achieve the ambitious objectives we have set ourselves, namely to develop the self-confidence of pupils, which will enable them not only to learn more effectively, but give them the courage to uphold their values and embody them fully. Today's society needs individuals with a strong conception of sustainable development and a genuine education on the "state of our planet" (Pellaud & Eastes, 2019). Such a vision requires individuals to be able to stand up to surges of extremism – regardless of whether economic, religious or even environmental – in order to best preserve democracy, which continues to promote freedom of thought and expression.

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