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**FOUR KEY SKILLS - REFERENCE FRAMEWORK FOR  
INTEGRATED CURRICULUM**

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**Abstract**

Our job as educators is not to manage an education system that trains our children to cling on to our world, it is to create a system that frees them to seize their own. What kind of people will our children need to be for adapting at new this world? They will need, above all else, huge levels of self-confidence; they will need to be adaptable, utilize their natural creativity and understand their own strengths and weakness. They will need to be increasingly self-aware emotionally and intellectually and to be capable of building relationships quickly. Does our system explicitly seek to develop these soft skills in its current state? Is it preparing our children for the challenges of their future?. How school subjects are taught largely influences the attitude and motivation of students to study and consequently their results in learning? From our point of view four transversal skills are vital to the school education curriculum change: critical thinking, problem solving, effective communication and social interaction - cooperation. Clarify meanings, the composition and role are preceding any attempt to develop training programs in integrated learning direction. In the following we review each jurisdiction provided above as the basis of experimental training programs of the four cross curricular skills.

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**Keywords:** Critical thinking; problem solving; effective communication and social interaction – cooperation; transversal competences.

## **1. Introduction**

We must look to the future with clarity and confidence and redefine the purpose of schooling. Our children are not going to be entering a world where they will find jobs neatly packaged into those easy categories of white-colour or blue-colour. Technologies indeed change the way we interact with knowledge. Education has moved from a broadcast model to one where we understand and make sense of information. We might need to rethink school curriculum organisation to provide a balance between providing information and supporting young people in creating knowledge. We must help the children to



develop the skills and competences to deal with the information revolution and, most importantly, we must help them to realise that they have the tools for that.

The key to success as learners is to develop and hone the skills needed to be successful students. The role of schools is to prepare children to meet the open-ended problems of their life journeys. The curriculum must be seen as an expansive experience that encompasses every moment of a child's experience in school. Information can only be power if you have the skills to use it to develop your journey and turn facts into knowledge. We need to develop innovators, leaders and creative thinkers. We need a curriculum that works toward that goal to develop a marriage of skills and relevant knowledge, to apply knowledge in contexts that fire the imagination and stimulate a desire to explore further. in contexts that fire the imagination and stimulate a desire to explore further.

By creating a new purpose we were able to start to make sense on the curriculum, the new initiatives and the new thinking surrounding child development, because every time we examined an external strategy we were able to ask how it would support the development of our children's learning profiles.

## **2. Purpose of the Study**

The paper argument is about developing a curriculum that is creative, is helping our children to learn new skills and develop new competences they will given a richness of experiences and a climate of discovery, develop a desire for and acquisition of new knowledge that will feed their creative process, ensuring that they constantly question, look for new pathways and solutions, think critically and have the confidence to generate fresh ideas.

Education specialists find realistically as school today, by providing national curriculum depersonalized and development of mostly conceptual thinking underestimate the student's learning potential at school. We find in the curriculum, at least in Romanian, a number of gaps. Isolation sufficiency educational disciplines, highly fragmented, focused on inventory content and methodologies artificial, is a clear symptom of the gap. In this sense, it becomes necessary transdisciplinary approach. This reflects, generally speaking, the unity of knowledge and holistic approach to education. Curricular perspective, it aims at merging several subjects as curricular integration, with the possibility of creating a new approach to knowledge. In the National Education Law (2011, article 4) is stated: "competence means the proven ability to select, combine and use the appropriate knowledge, skills and other acquisitions consisting of values and attitudes for successful resolution of certain categories of work or learning and for personal or professional development in terms of effectiveness and efficiency. " Professional competence is "a unitary and dynamic knowledge and skills. Knowledge is expressed by the following descriptors: knowledge, understanding and use of language specific explanation and interpretation. Skills is expressed by the following descriptors: application, transfer and problem-solving, reflection and constructive criticism, creativity and innovation ". The relevant significance in relation to the issue we must tackle is "Education and training for children, youth and adults have the primary endpoint skills training, understood the whole multifunctional and transferable knowledge, skills / attitudes ...".

The challenge of education today can be summed up by Thomas Friedman and Michael Mandelbaum (2011, p138) "We believe that as we move into the future world will be divided and increasingly more between countries that stimulate the creative imagination, which encourages and develop imagination and additional resources of their population and those who do not stimulate at all that suppress or simply fail to develop creative abilities of people and their ability to produce new ideas, initiate new industries and to fuel additional resources ... "

### **3. Key Competences in Integrated Curriculum**

The European competence framework which refers to 'key competences' appears in most studies. This concept has been adopted by all European education systems, but the specific terms used, and the exact content of the set of competences, varies across countries. Depending on the country and context, legal, policy and curricular documents make reference to core competences for example, key capacities (as in Scotland ), basic skills (as in Spain) or key skills (as in Ireland); and other similar terms are also in use.

Some countries have invested in intensive professional development when introducing new competence-based initiatives, like Project Maths in Ireland, which we will be hearing about in the next video. Each pilot school involved in Project Maths was allocated a regional officer to provide teachers with in-school training to support them in this new approach to teaching, learning and assessment. Portugal is an example of a country with a specific initiative aimed at developing teachers' ICT skills so that they can in turn develop their students' digital competence. The EduScratch initiative promotes the educational use of the programming tool Scratch, which helps develop students' computational thinking. Teachers were offered in-service training to support their use of the tool (OECD, 2012).

According to Ken Robinson( 2015), in his many appearances, talks about the innate curiosity of students as often undermined by school. Today happens to be more important than what you know than what you can do with what you know, that information filtering and applying that knowledge in new variants. Problems today seem to be too complex to be solved with a single discipline-specific tools.

Tony Wagner (2008) describes new skills they need for career students in the XXI century, the desire for development and learning:

- ✓ Ability to think critically and solve problems;
- ✓ Networking and the dominant influence;
- ✓ Flexibility and adaptability;
- ✓ Initiative and entrepreneurship;
- ✓ Accessing and analyzing information;
- ✓ Effective oral and written communication;
- ✓ Curiosity and imagination

From our point of view, transversal skills are vital to the school education curriculum change: critical thinking, problem solving, effective communication and social interaction-cooperation. Clarify meanings, the composition and role are preceding any attempt to develop training programs in integrated learning spirital. The steps of this nature have their extra justification, resulting from converging and diverging conclusions of the research in the area of discussion. In the following we review each

jurisdiction provided above, that are basis of an experimental training programs of the four cross curricular skills

### **3.2. Critical Thinking- Basal Component of the Integrated Curriculum**

Critical thinking is the ability to think clearly and rationally, understanding the logical connection between ideas. Critical thinking has been the subject of much debate and thought since the time of early Greek philosophers such as Plato and Socrates and has continued to be a subject of discussion into the modern age. Is a general term that covers all thinking processes that strive to get below the surface of something: questioning, probing, analysing, testing and exploring. It is not a negative term as such, although it can sound it. Critical thinking requires detective-like skills of persistence to examine and re-examine an argument, in order to take in all the angles and weigh up evidence on every side. To think critically is never to take something on ‘face value’ but to question and think independently about an issue, however ‘authoritative’ a writer or thinker may be.

Facione (1990) says that critical thinking is “purposeful, self-regulatory judgment which results in interpretation, analysis, evaluation, and inference, as well as explanation of the evidential, conceptual, methodological, criteriological, or conceptual considerations upon which that judgment is based”.

Sternberg(1986) describe this process “the mental processes, strategies, and representations people use to solve problems, make decisions, and learn new concepts”.

In the opinion of Willingham (2007) “seeing both sides of an issue, being open to new evidence that disconfirms your ideas, reasoning dispassionately, demanding that claims be backed by evidence, deducing and inferring conclusions from available facts, solving problems, and so forth”.

Another area of disagreement among critical thinking researchers is the extent to which critical thinking skills and abilities can be transferred to new contexts. For example, researchers have noted that students may exhibit critical thinking skills and abilities in one context, or domain, but fail to do so in another (Willingham, 2007). This issue is closely related to that of the domain-specificity of critical thinking. For example, those maintaining that critical thinking is completely domain-specific are more likely to be skeptical of students’ abilities to transfer critical thinking skills from one domain to another. Others, however, are more sanguine about the possibility of student transfer, particularly if students are given opportunities to practice critical thinking skills in multiple domains and contexts and if students are taught specifically to transfer those skills (Kennedy et al., 1991).

Scheffer and Rubinfeld (2001) discuss critical thinking habits and critical thinking skills. In the above table is describes some examples:

**Table 1.** Critical thinking skills

<b>Critical thinking skills</b>	<b>Activity statements</b>
Analyzing	Separating or breaking a whole into parts to discover their nature, functional and relationships. I studied it piece by piece I sorted things out

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Applying Standards	Judging according to established personal, professional, or social rules or criteria. I judged it according to...
Discriminating	Recognizing differences and similarities among things or situations and distinguishing carefully as to category or rank. I rank ordered the various... I grouped things together
Information Seeking	Searching for evidence, facts, or knowledge by identifying relevant sources and gathering objective, subjective, historical, and current data from those sources I knew I needed to lookup/study... I kept searching for data.
Logical Reasoning	Drawing inferences or conclusions that are supported in or justified by evidence I deduced from the information that... "My rationale for the conclusion was...
Predicting	Envisioning a plan and its consequences I envisioned the outcome would be... I was prepared for...
Transforming Knowledge	Changing or converting the condition, nature, form, or function of concepts among contexts I improved on the basics by... I wondered if that would fit the situation of ...

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### **3.3. Communication, the Foundation of Development of All Key Competences**

Effective communication skills are fundamental to success in many aspects of life. Many jobs require strong communication skills and people with good communication skills usually enjoy better interpersonal relationships with friends and family.

Studies have shown that listening is the most frequent aspect of workplace communication (Adler and Elmhorst, 1999). Other studies have identified that managers spend 65-90% of their working day listening to someone, with the percentage of time increasing with level of managerial responsibility (Kotter, 1982). However, research suggests that misunderstandings are the rule rather than the exception, and that people generally achieve no more than 25-50% accuracy in interpreting the meaning of each other's remarks (Spitzberg, 1994). Becoming fully proficient at listening would therefore seem to have significant influence on workplace communication and related effectiveness.

As we listen to others we interpret and evaluate the meaning from the verbal and non-verbal information that we receive. We also plan and rehearse our response in preparing to execute it. While the processes of evaluation, planning and rehearsal occur subconsciously, they can nevertheless interfere with effective listening. It can be important to maintain awareness of this to ensure that the processes that mediate between listening and speaking do not actually interfere with the listening process itself.

Nonverbal communication has been said to have a greater universality than language, in that 'we can often make ourselves known in a rudimentary way through signs and gestures when communicating with people from differing cultural backgrounds who do not share a common language. However, a word of warning- non-verbal cues can also differ dramatically from culture to culture. An American hand gesture meaning 'OK' for example, would be viewed as obscene in some South American countries. It can be vital for those in contact with people from different cultures to do their research and discover what

it means to make eye-contact, use hand gestures, to touch another person etc in the other culture; and especially to find out what is taboo (Goman, 2002).

Written communication is the ability to use the conventions of disciplinary discourse to communicate effectively in writing with a range of audiences, in a variety of modes (e.g., persuasion, argument, exposition), as context requires, using a number of different means (e.g., graphical, statistical, audio-visual and technological).

Baker, E., Barrett, M. & Roberts, L. (2002) describes the structure of writing process in some issues:

In the essay introduction have you:

- taken account of the interests of your reader and identified possible sources of resistance?
- analysed what the question requires you to do?
- defined the scope of your topic without being apologetic?
- attracted the reader's attention early, either using a thesis statement or in some other way?
- included a clear, arresting thesis statement, or planned one to use later in the essay?
- orientated your reader, either using a forecasting statement or another method?

In the body of your essay have you:

- ensured that each paragraph has one central idea?
- ensured your paragraphs support the essay's main idea or relate to it in some other way?
- used appropriate evidence, illustrations and arguments to support each paragraph's main ideas?
- made links between preceding and following paragraphs and from the paragraphs to the essay's main idea?

• included a final statement that either sums up the central idea of each paragraph, suggests implications, or provides one or more of the linkages mentioned in the previous point

In the essay as a whole have you:

- linked ideas and evidence back to the main ideas?
- provided rounding off, or evaluative comments, or pointed to implications or possible further developments?
- dealt with any possible objections on the part of the reader?
- avoided introducing unrelated material?
- provided signposts for your reader through the essay's structure, headings and transition words?

In the conclusion process have you:

- avoided overly complex words and used acronyms and jargon judiciously?
- made conscious decisions about the use of first, second or third person pronouns, contractions, direct questions, run-on expressions and quotations?
- used an appropriate level of grammatical correctness?
- proofread your work several times for clarity, brevity, spelling and typographical errors?

It can take a lot of effort to communicate effectively. However, you need to be able to communicate well if you're going to make the most of the opportunities that life has to offer. By learning the skills you need to communicate effectively, you can learn how to communicate your ideas clearly and effectively, and understand much more of the information that's conveyed to you. As either a speaker or a listener, or as a writer or a reader, you're responsible for making sure that the message is communicated

accurately. Pay attention to words and actions, ask questions, and watch body language. These will all help you ensure that you say what you mean, and hear what is intended.

### **3.4. Social Interaction-Cooperation**

Models of social interactions seem particularly adapt to solve a pervasive problem in the social sciences, namely the observation of large differences in outcomes in the absence of commensurate differences in fundamentals. Many models of social interactions exhibit strategic complementarities, which occur when the marginal utility to one person of undertaking an action is increasing with the average amount of the action taken by his peers. Consequently, a change in fundamentals has a direct effect on behavior and an indirect effect of the same sign. Each person's actions change not only because of the direct change in fundamentals, but also because of the change in the behavior of their peers. The result of all these indirect effects is the social multiplier. When this social multiplier is large, we expect to see the large variation of aggregate endogenous variables relative to the variability of fundamentals, that seem to characterize phenomena as diverse as stock market crashes, religious differences, and differences in crime rates. In fact, if social interactions are large enough, multiple equilibria can occur - that is one may observe different outcomes from exactly the same fundamentals. The existence of multiple equilibria also helps us to understand high levels of variance of aggregates.

Social interactions models have implications for the sorting of people and activities across space. As Schelling (1971) demonstrated, when individuals can choose locations, the presence of these interactions may result on segregation across space, even in situations where the typical individual would be content to live in an integrated neighborhood, provided his group does not form too small a minority. Cities exist because of agglomeration economies which are likely to come from non-market complementarities. In dynamic settings, social interactions can produce shaped curves which help to explain the observed time series patterns of phenomena as disparate as telephone adoption and women in the workplace.

### **3.5. Problem Solving**

Most collaborative problem-solving tasks can only be accomplished if available resources are identified and information elements about them are collated and shared. Therefore, an important flexibility and ambiguity aspect of planning is collation of data and the management of resources that are available to oneself and to one's collaborators. To assess planning skills within the context of collaborative problem-solving it is useful to distinguish six sub-skills – problem analysis, goal setting, resource management, and planning complexity:

Problem analysis - refers to the ability to identify the elements of a task and the information available for each of the component parts. This also entails recognition of the interdependences that might arise between components of the problem space. It requires a student to be able to identify the need for pertinent pieces of information; to understand the relationships between them and patterns that might emerge; it further requires an understanding of how pieces of information are interdependent.

Goal-setting - refers to the formulation and sharing of specific sub-goals that will help to monitor the process of collaboration progress towards problem resolution. The collaborative problem solving

group needs to formulate specific goals. These goals and take the form of rules “if I do A then B should occur and I will be able to make progress towards goal C.”

Resource management - reflects the ability to plan how collaborators can bring their resources, their knowledge, or their expertise to the problem-solving process and how they make decisions about the process of conflating data.

Flexibility skills - Many collaborative problems can be somewhat ambiguous. Tolerance for ambiguity is a characteristic that can help overcome the barriers in problem-solving activities. Moreover, collaborative problem solvers need to be adept at changing plans in a flexible manner. We can think about the flexibility required for successful collaborative problem-solving as a range of sub-skills including tolerance for ambiguity, breadth of focus, and communication. Flexibility also involves the capacity to negotiate and to understand the perspective of other collaborative partners. Different levels of ambiguity tolerance lead to different collaborative problem-solving behaviours – some collaborators only become active in unambiguous situations, some react to ambiguity by further exploring the problem space, whereas some collaborators are likely to interpret ambiguous situations in a way that helps them in joint decision-making about the next solution step. Where there is an imbalance in these skills and capacities, the progress towards resolving issues associated with ambiguity may be more difficult. The symmetric nature of the collaborative teams may need to be taken into account in resolving differences in collaborative problem-solving skill.

- As to breadth, a low skill level is displayed if collaborative problem solvers follow only a single line of inquiry.
- A medium level entails trying multiple approaches being discussed and explored amongst the collaborators once an impasse is reached, or once new evidence is available via monitoring.
- A high level of breadth leads to a re-organization of problem representation by the group, or planning activities being identified by the collaborators once progress through the problem space is impeded.

Collecting data – In a collaborative problem-solving context, the actions of one partner may have a consequence for another and these need to be monitored and recorded. It is a design feature that, in a collaborative context, each of the partners lacks specific and crucial information, or alternatively each participant controls specific resources, information or has particular expertise unique. Also, in realizing that the each person lacks crucial information, there is a need to develop strategies to acquire this information, the collaborators are developing important monitoring activities. In collaborative problem-solving, this type of monitoring becomes essential, as different problem solvers typically have access to different types of information, or have different means to access needed information. The way in which the collaborators link this information and record cause and effect enables them to establish rules of operation which they can share in order to make progress towards the problem solution. These skills refer to the ability to detect when and how missing information can be acquired and shared.

- Some collaborative problem solvers lack skills to recognize a need for information and may lack the skill of either providing or acquiring information from collaborative partners.
- At a medium skill level, information needs are recognized, but only with regard to the current activity or problem state.
- A high level of information acquisition skills entails adequately assessing the need for information with regard to current, alternative, and future problem space or states.



Systematicity - refers to the thoroughness and efficiency of the problem-solver's approach.

- The most basic level of systematicity involves a trial and error process.
- Using forward search through a problem space bears witness to a medium level of systematicity,
- Whereas high systematicity can be inferred if forward and backward search are combined through means-ends analysis or similar techniques, and followed by reflective monitoring activities.

The importance of collaborative problem-solving in the workplace is increasing as societies and workplaces become increasingly knowledge dependent. Collaborative problem solving requires that the people combine their resources and their strategies in order to reach a common goal. The assumption here is that collaboration is essential because the task is too complex for a person to work through it alone. It may be that different people possess different information; different expertise and experience that they can bring to the problem space in order to jointly share the knowledge, experience and strategies in order to jointly solve a particular problem. So combining resources is important. So too is the knowledge and the kinds of skills that each person possesses. So we would argue that collaborative problem-solving has these two main components. The collaborative, sharing or social aspects and the knowledge, strategic, problem-solving or cognitive aspects

#### **4. Conclusions**

Support the development of transversal skills is a complex process. This involves introducing or adapting policies to improve the quality of education and ensure that teaching and learning continues to reflect the needs of individuals and society.

The process takes place at many levels and involve a number of different organisms. In many countries, an important element is the introduction of a coherent strategic approach to improve knowledge, attitudes and skills students form a national strategy and a plan of action or similar policies. While such an approach is not a precondition for reforms, adoption educational community may indicate that a certain issue is considered a government priority.

A strategy or a national plan can also bring together a range of activities such as curriculum reform, teacher training and professional development and support for those with poor results and can address a variety of educational issues in a comprehensive way. In addition, a national strategy can provide direction and guide the efforts of local and school, while taking into account developments such as decentralization and increasing school autonomy. The absence of a national strategy could indicate that the central government believes that local bodies are best placed to conduct activities in the field or may simply indicate that a national strategy is ongoing or is still in the development stage. in Romania still we do not know the cause of all these problems but we feel that they are being addressed by addressing examples of good practice, indeed, singular, but we are in the process.

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