



## ON THE IMPORTANCE OF FOUR CS IN SCHOOLS AND BEYOND

<sup>1</sup>TANS FELIKS, <sup>2</sup>HILDA M. NALLEY, <sup>3</sup>JOHN BHAE

[felikstans@gmail.com](mailto:felikstans@gmail.com)

<sup>1,2,3</sup> Universitas Nusa Cendana, Kupang, Indonesia

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### ABSTRACT

In this article, we argue that our students at any level, that is, from primary to tertiary institutions, must have good competences concerning critical thinking, creativity, collaboration, and communication, contemporarily known as 4Cs, namely, four major competences of the 21<sup>st</sup> Century, while they are in schools because they need those kinds of competences to succeed beyond those educational institutions. It is, therefore, crucial for our teachers, including lecturers, to always train their students in such a way that their mastery of those crucial competences is excellent when they are in schools in accordance with their levels of formal education. It is believed that having great competences as such in schools helps the students, among other things, successfully solve any problems they face when they live their real lives in their society after their formal schooling. In other words, those who fail in their real lives after formal schooling are those who have poor competences in relation to critical thinking, creativity, collaboration, and communication. So, making sure that our students have excellent competences on critical thinking, creativity, collaboration, and communication, when they are in schools, is necessary for them to succeed in their lives after their formal schooling.

**Keywords:** Critical thinking, creativity, collaboration, communication, and students

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### INTRODUCTION

In its long history, formal education or formal teaching and learning in schools, that is, from primary to secondary ones, including formal teaching and learning at tertiary levels, has been misleading in some cases. In such educational institutions, in general, students who are regarded as smart are those who can memorize a lot. That is, the more they memorize the better. On the other hand, those who are considered “dumb” are those who fail to remember a lot of things. That is the less they remember what they have “learned”, the “stupider” they are. In that sense, the fact that it is very human for students to forget things is not even seen as something which is naturally human (Rogers, 1983; Neville, 1989; Tough, 2012).

In addition, students who are good at cognitive aspects are considered more competent than those who are “just” good at psychomotor and/or affective aspects of being a human. On the other hand, human life experiences throughout history, that is, from generation to generation, show that to succeed depends not just on ones’ cognitive competences, but also on their psychomotor competences and on their affective competences which are, more or less, related to ones’ character. It is even believed that ones’ character is a more determinant factor to success in life than their cognitive and/or psychomotor competences. In this context, Tough (2012) says:

There is something undeniably compelling about the cognitive hypothesis. The world it describes is so neat, so reassuringly linear, such a clear case of inputs *here* leading to outputs *there*. Fewer books in the home means less reading ability; fewer words spoken by parents means a smaller vocabulary for their kids; more math worksheets ... means better math scores. The correlations at times seemed almost comically exact: ... a child who grew up on welfare would need precisely forty one hours of language-intensive intervention each week in order to close the vocabulary gap with a working class child. But in the past decade, and especially in the past few years, a disparate congregation of economists, educators, psychologists, and neuroscientists have begun to produce evidence that calls into question many of the assumptions behind the cognitive hypothesis. What matters most in a child's development, they say, is not how much information we can stuff into her brain in the first few years. What matters, instead, is whether we are able to help her develop a very different set of qualities, a list that includes persistence, self-control, curiosity, conscientiousness, grit, and self-confidence. Economists refer to these as noncognitive skills, psychologists call them personality traits, and the rest of us sometimes think of them as character (p. xiv-xv).

Based on the arguments above, we argue in this article that it is important for our students to improve their "non-cognitive skills", that is, their critical thinking, creativity, collaboration, and communication to succeed in schools and beyond. These four competences (four Cs) are believed to be major competences that students have to master to succeed in this 21<sup>st</sup> century as suggested by Davidson (2017), Trilling (2009) and Kivunja (2015), *National Education Association* (2018) (in

Harari, 2019, p. 268) and Stauffer (2021). These four Cs are described below in relation to formal education at all levels of it in general, in language learning in particular.

## CRITICAL THINKING

Critical thinking is basically about ones' ability to think critically when they face a difficult situation or a problem that has to be solved because if the difficult situation or problem is not solved, they could face more difficult situation or the problems they face could be much worse. So, in that sense, those who find out that they are hungry and have no food to eat, for example, would try to think of how to get some food to eat so they can no longer be hungry. When they get some food to eat, no matter how they get the food, they can then get out of the problem. Critical thinking as such in the context of hungry people may go on to answer questions like what they do to overcome their food problems in the long run, for example, in days, weeks, months or years to come.

Quoting Glaser (2017), Clarke (2019), and Piergiovanni (2014), Wikipedia (ND) describes critical thinking as follows:

Critical thinking is the analysis of available facts, evidence, observations, and arguments in order to form a judgement by the application of rational, sceptical, and unbiased analyses and evaluation<sup>[1]</sup>. The application of critical thinking includes self-directed, self-disciplined, self-monitored, and self-corrective habits of mind<sup>[2]</sup>, thus, a critical thinker is a person who practices the skills of critical thinking or has been trained and educated in its disciplines<sup>[3]</sup> (<https://en.m.wikipedia.org>).

What is included in critical thinking is, of course, finding any answer to a problem properly, that is, without violating any law that regulates social harmony or existence. In other words, to say, for example, that they can get some food to eat by stealing is dangerous because when stealing they could be caught up and, therefore, be in bigger-

worse problem. In that sense, what is supposed to be done first is to solve their problems using legally acceptable ways like buying some food in that context and, if they do not have any money, they may borrow some from others they know to buy some food. Or, in the long run, they have to work harder to make sure that they have no food problem. Yet, it happens that some people in our society simply solve their problems by breaking the rules like stealing or, even worse, by committing a robbery in such a context.

It is, therefore, important that our students in schools be regularly trained not only to sharpen their critical thinking competences, but also to make sure that they solve their problems, whatever it is, without violating any positive law. The question is how teachers in schools can do that.

There could be a lot of answers to the question. First, students should be encouraged to think critically in schools. When they have problems in understanding, for example, simple present tense in English, they should always ask themselves how to overcome the problem. Asking how to overcome the problem will, of course, leads them to finding out some ways to overcome the problem by, for example: 1. studying simple present tense grammar in grammar books, google, and/or YouTube as well as any other devices that allow them to study in such a way that they can then understand what a simple present tense is and how it is used; 2. asking for help from their friends who understand simple present tense well; 3. asking for help from their teachers; 4. Doing a lot of practices concerning simple present tense, namely, how to use it in positive or negative statements, how to build up yes-no questions and wh-questions using simple present tense, how to answer the questions in long or short forms, and how to use it in negative forms as well as other issues related to simple present tense like how “es/s-forms” and “long and short answers” are used.

For Indonesian English learners, for example, in studying simple present tense in English, they may ask the following questions:

1. How can we say “*Saya makan nasi setiap hari?*” Is it, “I eat rice every day?”
2. How can we say “*Saya tidak makan nasi setiap hari?*” Is it “I don’t eat rice every day?”

3. How can we say, “*Saya tidak makan nasi setiap hari?*” Is it “I do not eat rice every day?”
4. How can we say, “*Apakah saya makan nasi setiap hari?*” Is it, “Do I eat rice every day?”
5. How can we say, “*Apakah Peter makan nasi setiap hari?*” Is it, “Does Peter eat rice every day?”
6. How can we answer it (question no. 10)? Is it, “Yes, he does” or “Yes, Peter does” or “Yes, Peter eats rice every day?”
7. How should we say, “*Siapa makan nasi setiap hari?*” Is it, “Who eats rice every day?”
8. How should we say, “*Kapan saya makan nasi?*” Is it, “When do I eat rice every?”
9. How should we say, “*Kapan Peter makan nasi?*” Is it, “When does Peter eat rice?”

Those questions, of course, can be endless as we may also ask questions related to pronunciation/speaking, listening, reading, writing, culture, and many more. Yet, what is important here is that when the students who ask the questions cannot answer the questions correctly or they are in doubt whether their answers are correct or incorrect, they have to study themselves from such means as grammar books or google search engine to make sure that they can answer the questions correctly. Or they may also ask for help from their friends or teachers or anyone else who can help them overcome their problem. This is particularly important for students’ processes of learning to write because writing is a language skill that seems pretty challenging for students in general, English-as-a-foreign language learners in particular (see, for example, Tans, 1994/1999; Tans et al., 2019).

This could also be applied to any other lessons they are studying in schools. Such critical questions will encourage them to study harder so they can answer any questions they ask or their teachers ask or any people ask when they are in the process of learning. Without the questions as such, they will not be able to improve their mastery of any lessons they are studying in schools. In addition, this can also be implemented concerning moral questions like what is right and what is wrong or is correct or incorrect as well as what can be done, what must be done or what is forbidden

in a particular context; why is it correct or incorrect and many more.

So, the essence of critical thinking in this sense is that students think critically by asking critical questions concerning their problems in their journey to mastery English and that they try their best to answer the questions critically that, in turn, they can then get out of their English learning problems, whatever they are, in such a context.

## CREATIVITY

The word “creativity” is derived from the word to “create”, that is, to produce something or an idea for the purpose of solving a problem faced by a person and/or others or for the aim of fulfilling one’s need(s) that, in turn, can satisfy him/her as well as others. This is why a person who “creates” something or an idea is called a “creator” of such a thing or idea. That person, in turn, is called a creative one.

In terms of English, critical thinking, which has been discussed before, and creativity can be well-developed through speaking, listening, reading, and writing. It is, therefore, important that teachers always try their best to improve their students’ mastery of English by asking them to use their language skills regularly. In other words, without using English in listening, speaking, reading, and writing. It is, therefore, impossible for someone to be creative because creativity can only be nurtured through such activities as listening, speaking, reading and writing.

Writing, for example, is a true reflection of creativity that, to a certain extent, is based on other language skills, that is, reading, listening, and speaking. This is to say that without one’s good comprehension of reading, listening, and speaking, he/she can never be a good writer. In that sense, what has been written by Tans (1994/1999) and Tans et al. (2020/2022) reflects their creativity that has been built upon their activities in reading, listening, and speaking, including their understanding of building up such aspects as content, organization, vocabulary, sentence and paragraphs structures as well as mechanics of writing itself.

Being creative has, of course, been very crucial throughout the history of mankind from generations to generations. For ancient human

beings, for example, facing cold weather forced them to think of having some ways to overcome their being cold by trying to have some clothes of, first, leaves, then, of cowhide before we have these days very modern clothes with various forms that suit us in every situation and/or condition we are in. It has also been the case for solving problems related to hunger and a place to live in. Human creativities along the history of humankind have allowed ancient human beings to have food, first, by hunting wild animals or picking fruits available around them and, then, having agriculture and/or animal breeding that, in turn, makes them more capable of solving their hunger. It is also the case for having some shelters for themselves from any cold/hot condition. Such a condition has forced them, first, to live in caves and, then, to build their simple houses as well as modern houses that we have had today, including any tools, that is, from those which are simple to those which are very sophisticated, needed to help them improve their abilities to get food and to build houses so that their hunger and cold whether/condition can be totally solved (Cf. Cubberley, 1948; Caldwell & Merrill, 1964).

Having some kinds of medicine, both herbal and non-herbal ones, to prevent and/or to cure diseases human beings have faced from generation to generation is another great example of such a creativity. Without it, it is certain, that our human life could have failed to last until now.

In schools, including tertiary institutions, human creativity as such is, of course, crucial because it can help our students overcome their learning problems. In other words, students that have no creativity to solve their own problems in learning will never be able to be free from their problems and, therefore, they will not succeed in schools and beyond. It is, therefore, necessary for teacher/lecturers to teach their students creatively and innovatively (Cf. Darmawan, 2014; Mudlofir & Rusydiyah, 2020).

It is then acknowledged that students’ creativity in schools and beyond is important, but the question is how our students can implement it when they are in schools. We argue that it should be easy for our students to implement it in schools as we have stated before (see p. 3) so long as teachers always try their best shot to make sure that

their students just try their best as well to practice critical thinking in schools.

Beyond school, having critical thinking is, of course, relevant. It can be applied when secondary school or university graduates, for example, are jobless. In that sense they will, of course, try to find jobs or at least to find solutions to such a problem. When they cannot find a job after hunting for it for days, weeks, months, or even years, creative people will not give up; they may create their own jobs like being traders, that is, buying and selling things or opening their own restaurants.

When they have no money to do those things, their critical thinking should work by, for example, asking for or finding out ways to get the money needed to have their own businesses in that case. What we are saying in that sense is that no one will be in trouble and/or fail in his/her life, if he/she actively uses his/her critical thinking.

## **COLLABORATION**

“Collaboration” basically means “working together”, that is, from Latin words “cum” (together) and “laborare” (to work), to achieve a goal or, in our case, to prevent and/or to solve a problem. This is important because it has been known commonly that “no man is an island.” That is, no one can solve his or her problem by his/her own.

It is true that some problems can be individually solved; we do not need others to help us solve our problems. When we are hungry, for example, we can simply cook some food to eat; when we suffer from a cold, we can just go to a local drugstore and find some drugs to cure our cold; when we do not have a handphone, we just go to a local handphone shop and buy one.

Yet, in some cases, we know, solving a problem is not that easy. When we do not understand a mathematic formula, for example, it is good to buy a book or search through a search engine machine like “Google” in our handphone or laptop, but we may not still be able to understand the formula. In that sense, finding someone else to help us free from that particular problem is necessary; that person could be a classmate or a teacher or anybody who understands the mathematic formula far better than us. By doing

this, our problem can, of course, be definitely solved.

Our human history shows that collaboration is important to make sure that things work or to enable us solve our problems. A complex building, for example, cannot be built just by a single builder or a carpenter or a craftsman; it needs more than one person or even more that one expertise to build it up.

Our life experience as such helps us understand that any competence concerning collaboration is crucial to succeed in life, including to solve our life problems. This is why collaboration is intensively nurtured in schools through such activities as having group discussion or doing a project-based task in groups.

It is, therefore, important that our teachers always try their best to make sure that our students have greater chances to work in groups in schools so that they will be able to solve whatever problem they find when they are in a society. In addition, it is also urgent that our teachers encourage our students to always find any positive help from others when such help is needed because there are always some people out there who are competent to help no matter how complex a problem is. That is the power of collaboration which usually works best under a good leadership (*Cf. Slater, 2004*). In other words, our students should always think that finding a negative way like committing suicide to “solve” a problem or applying criminal activities to get free of a problem is morally wrong and, therefore, they may not practice them in their real lives in schools and beyond (*Cf. Tough, 2012*).

## **COMMUNICATION**

The word “communication” is derived from the word “communicare” (Latin) which literally means “to make to common”. Through communication, communicators tell others, communicants, their ideas, feelings, and intentions verbally, in written forms or through their body gestures and/or symbols, so that something which is “hidden” in one’s mind can then be made “common” or known to others. In that sense, communication competence is basically aims at making something hidden known to others. Its further aim is to create understanding among communicators and communicants which, in turn,



builds up peace among them and, therefore, prevent conflicts. In addition, depending on its condition, it is also to solve a problem and/or to improve one's competence through interaction based on one's integrated condition. This is what Holmes (2012) calls communicative interaction and integrated communication (viii).

Like other competences mentioned before, that is, critical thinking, creativity, and collaboration, this kind of competence, communication, is crucial in schools and beyond because it definitely helps students improve their understanding of whatever they learn in schools and, of course, solve any problem they face along their learning processes. This, of course, can be achieved if our students are able to know how to communicate well when they talk with their teachers, friends, or any other people (using oral means of communicating) or in writing for particular audiences with various social statuses or backgrounds.

In communication, it is important that speakers or writers understand such various backgrounds of their listeners or readers because their failure to understand their speakers' or readers' backgrounds could create a social problem. That is, when students, for example, use such words as "kau" in Indonesian (you) to a lecturer, it is then very impolite and it, therefore, could result in a problem that ruins that student's relationship with his/her lecturer. So, to overcome a problem as such, speakers have to know their listeners' backgrounds or social statuses. In addition, it is also important to speakers to know what topics that are proper to talk about. Choosing a wrong topic or an irrelevant one could create a problem as listeners may not like the topic. It could also be related to how it is uttered by speakers, that is, using low or high tones send different meanings to different communicants. This is indeed crucial because communication is supposed to build up and/or to strengthen unity, similarity, and brotherhood (Holmes, 2012: 258). When the words used are, therefore, hurt or even ruin that unity, similarity, and brotherhood, communication then becomes something which is negative, a situation that we need to prevent in and beyond schools, particularly in a country as plural as Indonesia.

Like other competences that have been mentioned before, communication competence is

important for students, not only to create social harmony, but also to improve their understanding of what they learn in schools. That is, when they have problems in understanding a topic that they learn, good student communicators would be very active to ask questions to their teachers or peers related to the topic that they do not understand. By asking the questions, they can then have answers from their teachers or peers that, in turn, help them understand the topic better. In other words, if they do not ask questions to solve their problems, their problems can never be solved and, therefore, they will be still in trouble.

Having this kind of communication competence for students is beneficial not only in schools, but also beyond schools. It is when they live in a society that they find real problems that can only be solved by communicating them well to relevant and competent people so that their problems can be effectively solved. When a person, for example, is hungry, he/she should talk about it with others, so his/her communicants provide him/her some food to eat, so his/her being hungry can be properly solved. In other words, if he/she does not talk it with others, that problem can never be solved and, therefore, that person can never get rid of it or he/she could end up solving it wrongly. In order to avoid such a problem, making sure that our students are good at this communication skill, when they are in schools, is crucial. They indeed need it, when they want to solve the problems they face when they live their society later.

## CONCLUSION

In conclusion, we would like to restate here that our students in schools, regardless of what subjects/departments they are interested in, they all have to have strong competences related to thinking critically, being creative, collaborating, and communicating, namely, four major competences needed to succeed in this 21<sup>st</sup> Century. They need these kinds of competences, when they are in schools to succeed in their learning, that is, to master any subjects they are interested in.

In addition to improving their cognitive skill, our students from primary to tertiary institutions, also need these kinds of competences to ensure that their skills (psychomotor aspect of their learning)

and their character can then be getting better. In other words, by having good critical thinking, being creative, collaborating and communicating excellently well with others, they can then enhance their knowledge, skills, and characters when they leave their schools and live in a society that, in turn, help them solve their social and environmental problems. Thus, the competences as such definitely help them succeed in schools and beyond.

Without those kinds of competences, it is, therefore, impossible for our students to succeed in schools and beyond because these kinds of competences are crucial in today's modern world. For that reason, it is then crucial that our teachers always try their best to improve their students' critical thinking, creativity, collaboration, and communication by giving them more chances and practices to do project-based tasks in which their students have to apply those kinds of competences. By doing this, the students can then implement those competences to prevent and/or to solve any problems they face in schools and later in a broader society, beyond their schools, where they have great opportunities to practice what they have learned in schools.

We believe that it is the only way to make our students win, locally in the 21<sup>st</sup> Century, that is, they themselves can be independent because of their excellently great cognitive, psychomotor, and affective skills that, in turn, can be used for the benefit of others around them and of their environment where they live in.

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