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The creative platform: a didactic approach for unlimited application of knowledge in interdisciplinary and intercultural groups

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In interdisciplinary or intercultural groups, it is highly important that the members of the group are able to apply and share knowledge across the standard boundaries that exist around disciplines and practices. Often, a lot of effort is required to avoid pitfalls such as misunderstandings, judgemental discussions or just the inability to understand each other's professional, social or cultural way of thinking. This paper introduces the creative platform as a didactic approach for enabling a group to apply and share their knowledge without limitations coming from professional, social or cultural patterns of thinking and doing. In that sense, the creative platform is a mental meeting place where people with different professional, social and cultural backgrounds can meet and create new thoughts and actions together. The key in developing the creative platform as a learning environment is the use of 3D cases, which are learning exercises where the simultaneous use of brain, body and attitude constitutes a 3D access to learning. The core of a 3D case is an uncompromising use of three fundamental principles: parallel thinking, task focus and no judgement. At the end of the paper, we give examples of implementing the creative platform using 3D cases.

Keywords: creativity; interdisciplinary group work; unlimited application of knowledge; flow; parallel thinking

1. Introduction

Professions and education need a new discipline called *creativity*. We need creativity when we want people to *create* something. Creating should be understood in relation to all activities of the day, as well as to collaborative knowledge creation at work or at school. The mind normally reacts to a given task by pattern thinking (De Bono 1969). Patterns are essential for us to cope with everyday situations. Patterns help us save energy and time and keep us informed about our surroundings with minimum effort. However, there is a downside to it. Patterns also control our perception and thinking, which makes it difficult to perceive information in new ways, to conceptualise differently and to think and do things differently in a given situation (De Bono 1970). To grasp new perspectives or develop new solutions, we need creativity, which means cutting across the

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boundaries in our pattern-organising brain and body. Disciplines and cultures are the result of structuring patterns. Creativity is 'to ignore these patterns and to cut across the boundaries between these disciplines and cultures'.

In this paper, creativity is defined as the *unlimited application of knowledge* in thinking and doing. Knowledge includes information, expertise, know-how or whatever sources our thoughts or actions might have. When we think or do something, we apply knowledge. If we want to do something new, we need ideas about what to do and how to do it. Ideas are knowledge in action, and the building blocks of knowledge, constituting knowledge constructions, which can be played within a creative process that continues until the desired solution is obvious. Creativity is 'to play with knowledge in the search of other possibilities than the ones our pattern thinking normally would make us aware of'. This definition of creativity (*unlimited application of knowledge*) implies that creativity is the mean to cut across the limiting boundaries of subjects, professions, scientific, 'not scientific' knowledge, truths, lies, understanding and misunderstanding. Creativity is the only thinking process that uses and combines *all* the knowledge available in a group or an individual. Creativity is the discipline of sharing and applying knowledge across all professional, social, disciplinary and cultural boundaries.

Creativity, like most other disciplines, is not a discipline that can be taught in a lecture. To *create* is at the top of human capacity. It involves unlimited application of the knowledge a person has gained throughout life. Doing that involves courage to leave the automatic responses to stimuli, which are controlled by pattern thinking. In most learning situations, such as listening to lectures and working in project groups, students suffer from fear of not doing the right things in the right way. Fear has many faces and all of them are due to aspects of judgement. This paper claims that fear, which may seem to be negligible, is nevertheless the main barrier to creativity. This is the fear that every person will experience when he/she tries to step out of a pattern of normal behaviour or normal thinking. Teaching creativity, first of all, involves creating a learning environment where the students let go of the fear when stepping out of their dominating patterns of thinking and doing. The key to letting go of patterns is to remove judgement from the learning process. This might sound like a strange idea because judgement is a dominating concept in education.

A pure experience without reflection is the opposite of judgement, and likewise the didactic principles that focus on experiencing the opposite of those with focus on reflection, evaluation or any other kind of judgement. When teaching creativity we need a learning environment that focuses on experience, because experience is the only place where our perception is not controlled by our pattern thinking. In experience, all our knowledge is at our disposal. The creative platform offers such a learning environment.

2. Creativity is unlimited application of knowledge

Along the coastlines of Alaska, during ice storms, there are major problems concerning the removal of ice from power lines. The following dialogue about solving this problem is inspired by Michael Michalko 'taking a thought walk' (Michalko 2001):

(A) There are a lot of bears in Alaska; maybe we can use them somehow.
(B) Yes, we could make them climb the poles, thus making the power lines vibrate, so that the ice will fall off.
(A) . . . and if we place fresh meat on the top of each pole, this will attract bears, and make them climb the pole to get the meat.
(B) Yes, and let's bring the fresh meat in helicopters to the top of the poles.
(A) Then we need stockpiles of gasoline in the area for the helicopter.
(B) Hey, what about pouring gasoline on the wire and burn the ice away?

(A) Yes, or we could wrap heating elements around the wires to heat it off?
(B) Hey, how about we letting the helicopters hover over the power lines. Their hovering will vibrate the ice off the lines, thus solving the entire problem.

What they are saying could sound like it is just playing with thoughts; however, these thoughts are filled with extensive knowledge from particular disciplines of knowledge.

The knowledge in the dialogue is not presented as theoretical or methodological explanations, neither is it a discussion where different ideas are positioned against each other and argumentation is used as a method for finding the solution. Rather they use creativity. Creativity makes it possible for people with different backgrounds to easily understand and contribute their knowledge and experience in a problem-solving situation.

It is important to understand that a creative process is playing with diverse knowledge and experience. Let us look at each dialogue mentioned earlier and identify the knowledge presented in each of them.

There are a lot of bears in Alaska; maybe we can use them somehow.

- This sentence contains knowledge about the animal life in Alaska, and the idea that you can control animal behaviour.

Yes, we could make them climb the poles, thus making the power lines vibrate, so that the ice will fall off.

- This sentence contains knowledge that it takes huge strength to make the power lines vibrate from the poles, as bears are needed (bears are strong). It also contains knowledge of the principle of 'vibrating ice off'.

. . . and if we place fresh meat on the top of each pole, this will attract bears, and make them climb the pole to get the meat.

- Here is knowledge that bears can smell fresh meat from long distances, as well as knowledge that bears eat meat. Also here is knowledge that bears are excellent climbers.

Yes, and let's bring the fresh meat in helicopters to the top of the poles.

- This contains knowledge about the logistic problems in the coastline areas of Alaska. It also contains knowledge about helicopters being able to fly very close to the top of the poles.

Then we need stockpiles of gasoline in the area for the helicopter.

- This sentence contains more knowledge about 'logistical problem' of flying helicopters in this area.

Hey, what about pouring gasoline on the wire and burn the ice away?

- This idea contains knowledge about the heat capacity of gasoline.

Yes, or we could wrap heating elements around the wires to heat it off?

- This contains knowledge about the heating elements that 'ice off' the rear window or the side mirrors of a car.

Hey, how about letting the helicopters hover over the power lines. Their hovering will vibrate the ice off the lines.

- This last sentence contains knowledge about the turbulence effect created from the helicopter, as well as the effect that it will have on the ice.

The main point of the dialogue is that the ideas contain a lot of diverse knowledge combined to create a solution for the problem by the unlimited application of knowledge. Another point is that there is no analytical connection between the different ideas even though each idea is clearly inspired from the previous. The connection between the ideas is horizontal and based on principals or memes. The main principals are '*vibration of wires*' including the helicopter hovering and the bears' climbing, and '*heating the wires*' including the heating elements and the burning of the ice with gasoline. These principals are used as mirrors that connect different disciplines of knowledge or cultures.

A dialogue like this is only possible if the participants accept that all kinds of knowledge from all kinds of sources can be mixed and used without worrying about the status of the knowledge. It can be from any discipline. It can be scientific knowledge but it can also be experienced knowledge, from a TV programme about bears or knowledge from a hobby. It does not matter as long as it can be used in the play of unlimited application of knowledge.

The dialogue demonstrates that it is possible to enhance the application of knowledge and experiences in an interdisciplinary and intercultural group process if the group is allowed (and dare) to skip the dominating norms of communication that exists in companies and at universities, including logical argumentation, positioning of ideas and people, professional and personal persuasion, judgements and other kinds of 'good' behaviour in a discussion. The scope of this paper is to present a didactic approach which makes it possible for diverse groups to unlimitedly apply their knowledge in creating a common knowledge that solves a complex problem, or gives new solutions to existing problems.

3. Creativity is to think across disciplines, professions, cultures and . . .

Johansson recently made a worldwide study of how world-changing ideas have been developed by their 'idea-developers'. He finds that it happens at the intersection of knowledge from all disciplines, all cultures and all domains. Creativity occurs when the barriers between the disciplines, cultures and domains are removed. Johansson defines the intersection as the 'place' where it is possible to apply knowledge from one discipline, culture or domain to develop ideas for problems related to another discipline, culture or domain. He finds that only in the intersection will true *new knowledge* arise (Johansson 2004).

Dietrich argues that creative thinking involves the ability to break conventional rules of thinking (Dietrich 2004). This alone gives the assumption that you break down the limitations created by conventional rules of thinking. Dietrich continues that combining already stored knowledge elements produces new ideas (Dietrich 2004). Here he brings in the ability to work across different kinds of knowledge, and thus making the importance of unlimited application of knowledge stronger.

Altshuller found '. . . that 95% of "new problems" have already been solved – probably many times over' (Spain 2003). And he continues that you will most likely find the solution in industries and technologies which you do not have any knowledge about. In the 1970s and 1980s, he invented TRIZ – a matrix system that links across fields of technology and across industries in order to find the best solution to a problem (Gupta 2004). Altshullers' findings are directly in line with the unlimited application of knowledge across industries and technologies.

Horizontal thinking and *unlimited application of knowledge* are two important concepts used on the creative platform. Several researches have been conducted in attempting to understand the generation and development of an idea. Roe (1952) argued that a creative person has the capacity to generate unusual associations. This means that a creative person can find connections between disciplines and cultures, which are not obvious to other people (Roe 1952). These connections can eventually turn out as ideas for new products, new understanding,

etc. *Horizontal thinking* is a structured method for finding such connections. Maier finds that creativity is to use a well-known object in an 'unusual way' (Maier 1931). Maier and Roe find creativity to cut across obvious patterns to find new ones. Consider the example from 1878 of the development of the idea for the Tarnier-Martin couveuse by Stephanie Tarnier (Cone 1983). When he saw an incubator for 'baby birds' in a French zoo, he found an association to 'baby humans', thus getting the idea for his couveuse. This association leads to the application of knowledge from the field of Zoology to solve a problem in the field of medicine. Without unlimited application of knowledge, these two fields would have been separated and the application of knowledge for developing an incubator would have been limited to the field of Zoology, which eventually would not have had a result like the couveuse. Roe and Maiers' understanding is very much in line with the *unlimited application of knowledge* across known patterns.

These findings suggest that problem-solving requires interdisciplinary and intercultural knowledge to be available in order to produce new solutions.

4. Interdisciplinary and intercultural group work

There are several identified difficulties in people benefiting from interdisciplinary and intercultural group work. The difficulties identified in relation to creativity in group work are primarily related to free riding (Albanese and Van Fleet 1985), production blocking (Diehl and Stroebe 1987), group hierarchy (Turner 1991), norms and values (Martindale 1990) as well as evaluation apprehension (Diehl and Stroebe 1987). All these difficulties have their origin in the field of social relations. On the creative platform, focus is NEVER allowed to be on the participants' or their social relations. This will be elaborated later. As a result of this thinking, every participant is considered to be a mental library and nothing else.

Imagine the brain as a mental library similar to a physical library. The physical library contains physical books of authors from many different disciplines and cultures, while the mental library contains mental books of all the experiences and all the knowledge that a person has obtained through his/her life. Any idea, emotion or thought is based on the knowledge we have obtained through our life (Kohonen 1984). Therefore, our application of knowledge is limited to the knowledge we have obtained as individuals. In group work, the application of knowledge will be expanded to more mental libraries, eventually making the total number of mental books much higher. The diversity in the individual mental libraries determines the diversity of mental books available for problem-solving. From this perspective, it would be optimal to have as many different kinds of mental books as possible in the group, thus giving the group most potential solutions to choose from. This is the idea of diversity in groups.

Figure 1 shows how knowledge is applied and shared in a group work where discussion is the tool for problem-solving. The mental libraries are identified as individuals and have several barriers between each of them.

Figure 2 shows how knowledge is applied and shared in a group working on the creative platform for problem-solving. Here the mental libraries are identified as one huge library with no barriers between each of them, making it possible for knowledge to flow freely.

The main difference between the representations of brains in the two figures is the existence of barriers between the mental libraries (Figure 1), thus being the mental barriers between the members of the group. As long as these barriers exist, we will have difficulties in benefiting from interdisciplinary and intercultural group work, and thereby we will have difficulties in finding *new* solutions. At the creative platform, the barriers are reduced to almost nothing.

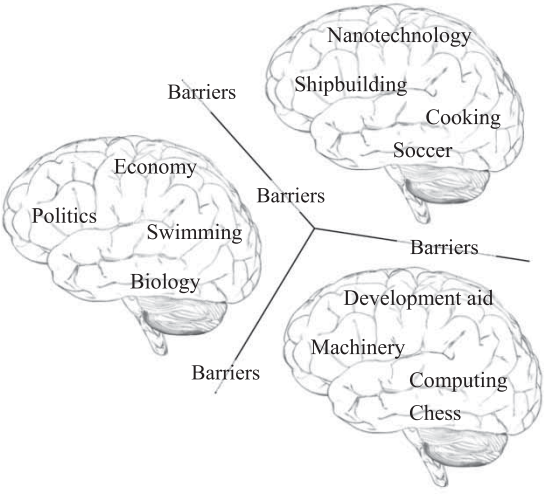

Figure 1. Barriers between mental libraries.

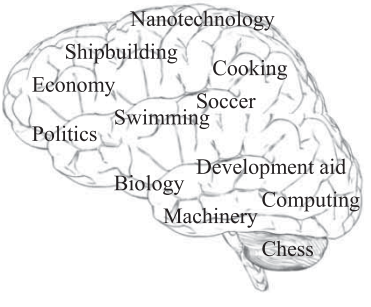

Figure 2. No barriers between mental libraries.

5. The creative platform

The creative platform is the idea of an ideal mental workplace for interdisciplinary and intercultural groups. On the platform, it is possible for professionals from all kinds of disciplines and cultural backgrounds to unlimitedly apply their knowledge to a common task or problem. The creative platform is a didactic approach built on four pillars: parallel thinking, task focused, no judgement and diversified knowledge (Figure 3).

5.1. *Parallel thinking*

Barron (1963) and MacKinnon (1962) have explained the personality of creative people as being totally absorbed in and devoted to their work. Creative people seem to be highly focused on their work while performing. They focus so much on their work that they become totally absorbed in it. Csikszentmihalyi (1990) defined this, not as a personality but rather as a mode of flow, which all humans can step into. When a person is in a flow mode, he/she is completely engaged in the work he/she is doing. It is a key element in the creative platform to create a process where the

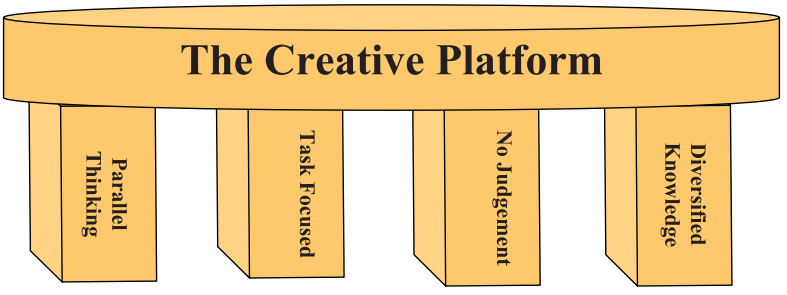

Figure 3. The creative platform is constructed on four pillars: parallel thinking, task focused, no judgement and diversified knowledge.

participants become completely absorbed in their work and experience a mode of flow on the specific task they perform.

The creative platform makes use of the concept of parallel thinking (De Bono 1994) in order to create this flow mode and this absorption. Parallel thinking must be used in all instructions, in all explanations, in all exercises – basically in all activities related to the participants in order to give the participant the experience of being in the flow/absorbance mode. The creative platform defines these states of mind as to *think only about one task at a time*.

Miller (1956) finds that we can think of about seven elements at a time as a human being. It is essential for us that we can handle more elements at a time in our mind. As a result, it becomes difficult to focus on one element at a time. It becomes difficult to be focused and completely engaged with one thing and that one thing only, because other thoughts seem to appear in our mind all the time. Imagine you want to solve a task, e.g. writing a paper. While writing the paper, a lot of other thoughts would appear in the mind. These thoughts can be like 'what should I make for dinner tonight', 'when is it time for coffee', 'who is calling me on the phone now', 'what should I do after this task', 'why don't I do this task in a different way', 'I have to remember that I have an appointment at the hairdresser tomorrow', 'do I perform this task the right way' and many more. Any of these thoughts makes it impossible to be totally absorbed with writing the paper, and you will not experience a mode of flow. While working in a group it becomes even more difficult, since not only your own thoughts disturb yourself, but also the thoughts of others, when they are outspoken, shown in body language and the like. Every time somebody speaks about anything else but writing that paper, he/she makes it more difficult to be in the flow/absorbance mode.

Parallel thinking is 'to focus the thinking of both the individual and all the participants in a group towards one task at a time'. Sternberg and Lubart (1991) identify that one of the keys for creative thinking is to divide a process for problem solving into a large number of smaller tasks. Parallel thinking divides the process of a main task into multiple subtasks. These subtasks are then given to the participants collectively, so that all participants are solving the same subtask at the same time – they are thinking in parallel upon the same task. Thereby it ensures that all subtasks of the main task will be taken care of separately in the process one at a time. They will not be mixed and not be overlapping. Therefore, parallel thinking is to structure/systemise the thinking of a group of people. The opposite of parallel thinking is to rely on self-organising social systems among the participants, where participants 'randomly' think and talk about the same or different subtasks at any given moment.

Parallel thinking maximises the sensitivity of the thinking about a particular area or field (De Bono 1969). The point is that a continuous thinking about a specific area is actually a stimulus for the thinking of the area itself. In other words, if you are at a party and everybody talks about their holidays in the south, then it will make you think and talk about your holidays in the south,

eventually making even more people think and talk about their holidays in the south. Parallel thinking creates a spiral effect, where the sole thinking about an area makes it easier to think about that particular area. This spiral effect is important in creating the unlimited application of knowledge possible for all the participants, as the increase in sensitivity 'opens up' the mental books that can be used for solving the particular subtask.

Csikszentmihalyi (1990) claims that one of the basics for achieving a mode of flow is to put the participants into a challenging situation; however, it must not be too easy nor too difficult. Following his rule seems to be possible as long as one is working with individuals. However, finding a balance for a group of participants is a difficult task. One participant in a group might be challenged by a particular task, which another participant finds too easy or too difficult. Parallel thinking seems to be able to create the flow/absorbance mode in groups. An important element in parallel thinking is the deadline for a subtask. A subtask should be formulated in a way that makes it possible to finish it in no more than 5–30 min. At this time, it should be possible to continue to the next subtask B no matter when subtask A is finished. Participants are only told to start solving a subtask and are not given any information about the deadline. The facilitator takes full responsibility that the time given for a subtask is sufficient to continue to the next subtask. None of the participants have watches on; neither do they have mobile phones or computers. Any watch in the building will be removed to avoid the participants focusing on the time. It is important that there are no times for social interaction or reflection among participants. Breaks are also identified as subtasks of their own, so that there would not be a necessity for a break in any other task. Any deadline must be followed by a kind of presentation, so that the participants know that they should start right away and keep on working on the task.

It is a constant deadline-driven process, where each result of a subtask leads to a 'presentation', followed by a new subtask. A process like that will create a flow/absorbance mode for a group as a whole. The core in this way of facilitating a process is to give the individual an opportunity to focus on the subtask 100% together with other participants, because everybody will be mentally forced into solving the subtask, thus leaving no room for participants disturbing each other with 'irrelevant-to-the-subtask' subjects. This will allow the participant to avoid being disturbed by other participants, while performing the subtask in collaboration with others. In other words, if you succeed in making everybody focus on the same subtask, they will have the privilege of not being disturbed.

In order to create a platform where parallel thinking is taking place, it is essential to identify potential disturbances for the participants' focus. Basically, any potential physical and mental disturbance should be removed, and this is the responsibility of the facilitator. From our experience, the following are essential disturbances to consider when creating the creative platform:

- All watches, mobile phones, computers must be removed right from the start of the process. Knowing the time only makes the participants think about when 'it is time for a coffee break', 'when I should be hungry', 'speculate in deadlines' or thinking about 'oh no, soon we have to be finished' and the like. The mobile phone and the computer are some of the major disturbances in terms of phone calls, sms, e-mail and the like.
- All drinks and foods including coffee must never come into the room where the process is taking place. The moment the participants can smell or see coffee, food, etc., it will be difficult for them to keep their mental focus on the subtask they are working on. Also if you eat something yourself while they are in flow/absorbance, you are actually destroying their possibility of staying in flow/absorbance.
- A process must never take place in a room that reminds the participants of some other activities or deadlines that they might have, e.g. in an office or in their normal lecture room, which might remind them constantly of an assignment they are due on. Even staying or walking in the room where you know you are supposed to have coffee or food at sometime will remove the focus.

- Nobody except the participants and the facilitator must be in, or come into, the room during the process. Any other person present will be a disturbance that removes the focus.
- Anything lying on the table or being dominating in the room, that is not related to the subtask should not be allowed. This includes paper and pens lying on the table. If the subtask that the participants are currently solving does not need paper and pen, they will only function as disturbances for the participants in that particular subtask. Allow items to be present only when they are needed.
- If a participant wants to go to the toilet or wants to go smoking, he/she should just do it without any remarks or asking 'if someone else wants a break'. It is the flow/absorbance of the group that is important, and individuals must not interrupt this. If a participant cannot understand 'what is going on right now', he/she should leave the process until he or she is ready to focus again. Remarks like 'I don't follow you' or 'I cannot understand what we are talking about right now' are only distractions and should never appear. Instead the confused participant should observe until he/she is able to understand again, and thereby capable of participating in solving the subtask again.

Parallel thinking gives a large number of responsibilities to the facilitator, which is not typical for a normal teacher or supervisor. However, it is important to understand that giving out responsibilities to the participants that are not directly related to the subtask they are currently working on is the same as giving them another thing to think about, thus taking away their possibility of coming into the flow/absorbance mode and being completely absorbed in the subtask. How to focus on the task will be dealt with in more detail in the following section.

5.2. *Task focused*

A pillar of the creative platform is to be task focused. On the creative platform it is important to be 100% aware of the focus of the task. Any task or subtask that is not the focus of the process should be removed from the participants, both in terms of responsibility and in terms of thinking.

Imagine you give an assignment to a group of participants to come up with ideas for a new kind of air filter. Then you leave the room for a couple of hours and come back into the room. Here you see that some of the participants are standing by a whiteboard and making drawings, others of the participants are lying on the floor and making calculations, one is making a painting, another one is singing a song and the rest are playing a game. At first you might think that this is very creative because the participants seem creative in terms of organising. However, from the viewpoint of the creative platform, such a situation is a failure. The task focus was to be creative about a new kind of air filter, and the real focus of the participants turned out to be about their organising. From one point of view you might think that being creative about the organising might also increase the level of creativity about the new kind of air filter. This might be true, but not on the creative platform. Here parallel thinking is used, and focusing on the task is central.

In a process on the creative platform, what the participants are to be creative about is controlled. If the situation described was on the creative platform, the participants will be led through a process, where each subtask will be one step towards solving the main task of finding an idea for a new kind of air filter. It is by structuring the process and dividing the main task into smaller subtasks that the facilitator makes it possible for the participants to focus on one task – and nothing else. On the creative platform, the participants are allowed to focus so much on the task that they lose track of time, that they lose track of colleagues, that they lose track of themselves. Only then will they be completely on top of the creative platform and be able to unlimitedly apply their knowledge. However, in order to allow participants to do that, the facilitator has to take control

of any factors other than the task itself. This is also the reason why there is a need for a hard but kind leadership of the process and the participants. There must be no doubt that the process is controlled by the facilitator, and any attempt to divert from the planned process is misleading from the task under focus. The facilitator should prepare all methods and all exercises beforehand, to avoid the participants thinking about alternative methods and alternative exercises. Once they start to think that they can influence the process, they start focusing their thinking towards how to use this influence positively, and they are not task focused any longer. To give a stronger allowance to the participants, it is a good idea not to explain or outline the entire process from the start.

From the start of the process it should be clear to the facilitator what the participants should be creative about: working methods, how to generate a more creative atmosphere, how to communicate in a group without using any kind of judgement, how to solve a practical problem (e.g. develop a new backup system for a combine harvester) or a more abstract problem (e.g. how to develop an organisation in a new way). However, working on the creative platform, there can only be ONE focus, and that will be the task focused for the participants, thus being the only element they can be creative about.

5.3. *No judgement*

The main barrier to group work is the fear of being judged. This fear controls the openness of communication among professionals (Johnstone 1987) and thereby their ability to create new knowledge constructions. In the literature, there is a huge focus on the necessity of creating confidence in creative processes (Nickerson 1999). The creative platform is a *mental state* where the normal fear in professional relations is reduced. It is the fear of being wrong, the fear of being misunderstood, the fear of losing face and the fear of losing power. The origin of all fear in a group work is judgement. Judgement occurs when ideas or persons are subject to any reflection or evaluation coming from themselves, another participant or the facilitator.

The key to reducing this fear is to remove any kind of judgement in the group. On the creative platform there is no room for judgement. This is the main difference between a normal academic discussion and working on the creative platform. In a normal academic discussion, people start to build a relationship by introducing themselves, saying who they are, what they do, about their experiences and knowledge. Think about it – in this kind of introduction they reproduce and enhance the way they see themselves in a situation to which they already, by necessity, have certain expectations. The result of such an introduction is an individual reflection among the group members, which leaves the group with hierarchy and a set of expectations on how the members of the group are expected to behave and contribute. This is the mechanism called positioning.

On the creative platform, people are introduced to each other by performing small activities together that create common experiences. Right from the very minute a participant enters the creative platform, he/she is put into an activity. By doing this, the participants are left with no room for any kind of judgement. This makes them feel confident with the situation, since they do not have to behave or think in an expected manner. The behaviour is defined to be common for all on the creative platform. On the creative platform any social interaction is considered as elements that create room for reflection and therefore builds up an atmosphere of judgement. By avoiding this kind of social interaction and only focusing on tasks a common experience is created; it is therefore possible to decrease fear and to create an environment of individuals that let go of their artificial social manners, allowing them to be themselves.

Motivating a participant through positive judgement is often considered good, and most people would claim that saying something positive has a positive effect on people. This is not true for creativity. Some motivators actually have a negative effect. Amabile (1983) identifies two types of motivation: the intrinsic and the extrinsic. She found that the intrinsic motivation is conducive to creativity while the extrinsic is harmful to creativity. Any kind of positive feedback, praise and

appreciative inquiry are examples of positive judgement, and like negative judgement, it builds up fear in terms of expectations among the participants. The result of any kind of judgement will make it more difficult to be yourself instead of what you are expected to be.

On the creative platform, individual ideas are never positioned but any idea is considered as a block to build on, as is the case with lateral thinking (De Bono 1970). The same applies to the methods used during the process. Once the group is on the creative platform the methods are not evaluated, nor whether the members of the group are using them correctly. It is not discussed if anything could have been done better.

In a situation where there is a prize for the best performing group on the creative platform, the groups will only be informed about the prize at the end of the process. It has been proven several times that 'contracting for a reward' leads to lower levels of creativity (Kruglanski *et al.* 1971, McGraw and McCullers 1979). Amabile *et al.* (1990) have also found that people are less creative when simply being watched by others. In a teaching situation the facilitator must therefore look out of the window or do something similar while the participants are doing the tasks in order to avoid the feeling of external judgement among the participants. Never watch or stare at the participants, while they are working on the creative platform.

To be sure to avoid judgement, a simple principle can be used. ALWAYS keep focus outside the participants and their relations. Imagine that the common focus created by parallel thinking is like a concentrated beam of light. The light must NEVER hit a participant, not even from reflecting the task the group is working on. Judgement of the task, idea or the product can easily reflect back on a person or a group of people.

5.4. *Diversified knowledge*

Amabile (1983) identified domain relevant skills as a key element for creativity in her componential model of creativity. We also know from Johansson, Dietrich and Altshuller, as described earlier in this paper, that we need diverse knowledge for *new* ideas to appear. For the creative platform to reach it's optimal, it is necessary to have a broad and deep base of knowledge, meaning that we have as many mental books as possible. From this point of view, it would make no sense to put a group of children or homogenous people on the creative platform and expect something *new*.

6. 3D cases

3D cases are the exercises that build up the creative platform. The essence of a 3D case is to totally focus the participant's consciousness onto one task, leaving no room for other thoughts in his/her mind. He/she become so engaged in the task that he/she only experiences what is going on in the present moment, leaving no room for reflection of old patterns. The method for doing so is to develop and execute 3D cases based on the concepts of 'parallel thinking' (De Bono 1994): 'no judgement' and 'task focus'. A 3D case always involves the simultaneous use of body, brain and attitude in the learning process, as illustrated in Figure 4. There are four reasons for that:

(1) In a 3D case it is important to engage the participants' consciousness totally in the process. Using simultaneously brain, body and attitude helps doing that, as it binds our focus on ourselves and not on everything and everybody else.
(2) The attitude in a situation helps the participants to perceive differently and to change behaviour. 3D cases can have an element of changing attitude and therefore the behaviour of the participants.

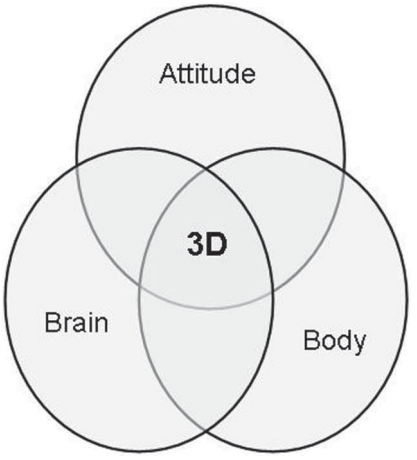

Figure 4. A 3D case involves a simultaneous and deliberate use of brain, body and attitude.

(3) The body is active, knowledge is easier to retrieve for application to a new knowledge construction.
(4) The body stimulates blood circulation in the brain, resulting in more energy for thinking and less fatigue.

The creative platform is built by using 3D cases throughout the learning process. The creative platform is an idea of a mental state that comes alive through the engagement of the participants in 3D cases. A 3D case is an exercise where two or more students *do* a task together. It comprises of the purpose of creating an experience with specific learning involved. The learning is always related to the task. 3D cases construct the purposeful change in behaviour of the participants needed for undertaking the task they are working on. Therefore, a task in a 3D case can be 'to accept mistakes', 'to celebrate mistakes', 'to use stimuli spontaneous', 'to communicate more creatively', 'to develop the potential of an idea', 'to avoid judgement of ideas' and so on. 3D cases are always constructed using parallel thinking, no judgement and task focused, and they always have an aim of teaching the participants something new by doing it. This is also what makes 3D cases different from the kind of exercises called 'energisers'. Energisers are also known as 'ice breakers'. Their purpose is to build up energy and to introduce people to each others. Energisers also involve body, brain and attitude, and some energisers even follow the concepts of parallel thinking, task focused and no judgement. However, the distinction between 3D cases and energisers lies in the purposeful task of learning for the participants in a 3D case. A 3D case is an exercise through which it is possible to learn a new behaviour, a subject or anything else. In the following, this paper will show examples of a 3D case.

3D case instructions. As a tool for teachers using the creative platform, we have developed instruction cards. Some of these will be examined here.

At the very start of the process on the creative platform, it would be normal to start with a few ice-breaking energisers. An important element is to break the standard social pattern that already exists or will emerge in any setting. If the participants start to talk about each other 'where are you from', 'what did you do yesterday', 'what is your expertise', 'what is your name' and so on, then it will be more difficult afterwards to build up the creative platform as judgement in terms of expectations and the feeling of 'knowing each others' has already begun to fill the room, and focus will be difficult to put on the subtask later. Therefore, the facilitator should take responsibility of

the starting of social construction between the participants. An example of how to start this is to use the 'handclap with closed eyes' energiser, which can be instructed like this:

- Stand up; find and make a pair with a person who has the same kind of shoes on as yourself; raise your right hand: when I say 'one', you clap your right hands together (say 'one' four to five times); raise your left hand: when I say 'two' you clap your left hands together (say 'two' four to five times); raise both your hands: when I say 'three' you clap both your hands together with the hands of your partner (say 'one', 'two', 'three' in a mixed sequence). Just before the energy starts to fall say: close your eyes; and repeat the clapping instructions above. End the energiser BEFORE the energy start to fade again.

This energiser can be followed by a 3D case, which presents the participants in a less judgemental way than traditional introductions:

- Stand up; find and pair up with a person who has the same kind of hair as yourself: close your eyes: think about your childhood dream (wait about 30 s); open your eyes; find out who of the two of you has the biggest hands; the person with the biggest hands tells about his or her childhood dream to the other person (wait about 30 s); stop, now the person with the smallest hands explain his or her childhood dream to the other person; end this 3D case by making the participants create a 'nametag' with their childhood dream on instead of their name and status.

The following 3D case will teach the participants to celebrate/accept mistakes made by themselves or made by other participants:

- Stand up; find and pair up with a person who is the same height as yourself; put your arms up in the air; repeat loudly and energetically after me 'Yes, we made a mistake' (repeat this sentence for three to five times); we start with a category called car brands, now you should take turns to mention car brands until you make a mistake (say one that has already been said, spend more than 2 s to think about the next car brand or simply cannot come up with more car brands); when one of you make such a mistake, both of you will celebrate it by screaming 'Yes, we made a mistake'; after making a mistake you decide for a new category and continue filling out this new category with the same rules; the person with the longest hair starts the exercise now. End the 3D case BEFORE the energy start to fade again.

The following 3D cases will teach the participants to apply their knowledge in a more unlimited way:

- Stand up; find and pair up with a person who has the same kind of jeans/skirt/dress on as yourself; find out who of the two of you have the brightest eyes; take a stimuli card each (a card with 12 random words); you are about to plan a holiday together in your two-man teams; take turns to read a word from the stimuli card – the first idea that you get from reading the word is part of your common travel; say your idea out loud to your partner and help each other to make a logical connection between the ideas and the travel you are planning; then the other person will read a word on his/her stimuli card and so on ...; the person with the brightest eyes will start this exercise now. End the 3D case BEFORE the energy start to fade again.
- Stand up; pair up with a person who has the same kind of sweater/blouse/shirt on as yourself; find out who of the two of you have the biggest nose; take a stimuli card each (a card with 12 random words); you are about to develop a completely new kind of bicycle together in your two-man teams; take turns to read a word from the stimuli card – the first idea that you get from reading the word is part of your new bicycle; say your idea out loud to your partner and help each other to make a logical connection between the idea and the new bicycle; then the other

person will read a word on his/her stimuli card and so on. . .; the person with the biggest nose will start this exercise now. End the 3D case BEFORE the energy start to fade again.

- Stand up; pair up with a person who has the same temperature hand as yourself – shake hands to measure and find the right one; find out who of the two of you have the longest nails; take an item from the item box each (the item box contains random items like a door handle, a cup, a USB memory stick, an ashtray, etc.); you are about to develop a lot of completely new products in your two-man teams; start with the item held by the person with the longest nails; develop the next version of this product by implementing features/functions/principles from the other item; when this is done you continue with the item held by the person with the shortest nails; start this exercise now. Change the teams randomly to make them try it out with a number of different partners/items. End the 3D case BEFORE the energy start to fade again.

The above-mentioned 3D cases are examples of how to instruct a 3D case. Many more 3D cases exist and they can be developed with any kind of task/learning focus.

3D cases always use body, mind and attitude to construct a learning situation. Our attitude controls, to some extent, what we are capable of *perceiving* from an experience. The attitude can be located somewhere in between brain and body and all three of them influence each other and thereby our perception of any situation. From this it can be suggested that instead of having a purely brain-to-brain (cognitive) communication, learning should be dominated by communication that includes brain, body and attitude. This approach is coherent with Nonaka and Takeuchi (1995), who emphasises the oneness of body and mind in innovation. Basically a 3D case is to 'do it', instead of 'talking about it'. From the experience of *doing*, the students will be able to redo it again, while a reflective learning environment will make the student able to talk about how to do it. That is the basis of 3D cases – it is about doing it, instead of talking about it.

7. Perspectives on using the creative platform in education

The core of constructing the creative platform is to create a common focus outside the participants' selves that is so strong that all their awareness is present at the task they are working on. The means to do that is the uncompromising use of parallel thinking, task focus and no judgement in 3D cases. From this follows a shift in the participants' mental state. They let go of the professional, social and cultural 'masks' that everybody is wearing in any social context like working in a group. They start to build up more self-respect and to act more freely. They become more creative and are able to use their knowledge in a less restricted way – in an unlimited way.

Any process on the creative platform, no matter which task they are working on, will develop the participants' self-respect and produce a more creative professional, social and cultural environment. In some learning situations, the process itself might be the aim, instead of the product. This is the case if the aim is to use the creative platform to build up social competences or to build on participants' self-respect. In most learning situations, it is the combination of process and product that is useful.

8. Conclusion

The creative platform is a didactic approach for intercultural and interdisciplinary group work. It creates a mental state where the participants' diverse knowledge can be applied unlimitedly in a collaborative knowledge-creating process. It is an open space environment where the normal barriers

to collaboration emerging from fear is removed and replaced with confidence, concentration and motivation. This is achieved by using the principles of parallel thinking, tasked focus and no judgement.

The creative platform has proved to be successful in a number of settings which have in common that students and professionals with different backgrounds meet for a fixed period of time to solve a problem. These experiences include the followings:

- taking a didactic approach to interdisciplinary and intercultural group work at the university.
- proposing a method to establish collaboration between students and companies where interdisciplinary groups of students find new solutions to specific problems in companies.
- building joint R&D units in collaboration with companies operating on different products and markets.
- finding an alternative to brainstorming in starting up new projects.

The results from studies on the creative platform suggest that when implementing parallel thinking, task focused and no judgement, group work will be focused and participants will become less judgemental, allowing flow/absorbance and creativity to emerge. The creative platform may be an interesting reaction to the paradigm of reflection that has dominated higher education during the last decade. Reflection and flow are both necessary in a working process. Experiences from using the creative platform suggest that they should be separated in an educational or working process. The creative platform is a didactic approach optimised for flow. In an educational setting, it can be followed by a didactic approach optimised for reflection.

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