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SEnDIng

D3.3

TRAINING MATERIAL FOR TRANSVERSAL SKILLS DEVELOPMENT

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Delivery Slip

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PROJECT SUMMARY

SEnDIng project aims to address the skills' gap of Data Scientists and Internet of Things engineers that has been identified at the ICT and other sectors (e.g. banking and energy) at which Data Science and Internet of Things have broad applications. To achieve this goal, SEnDIng will develop and deliver to the two aforementioned ICT-related occupational profiles two learning outcome-oriented modular VET programmes using innovative teaching and training delivery methodologies.

Each VET program will be provided to employed ICT professionals into three phases that include: (a) 100 hours of online asynchronous training, (b) 20 hours of face-to-face training and (c) 4 months of work-based learning. A certification mechanism will be designed and used for the certification of the skills provided to the trainees of the two vocational programs, while recommendations will be outlined for validation, certification & accreditation of provided VET programs.

Furthermore, SEnDIng will define a reference model for the vocational skills, e-competences and qualifications of the targeted occupational profiles that will be compliant with the European eCompetence Framework (eCF) and the ESCO IT occupations, ensuring transparency, comparability and transferability between European countries.

Various dissemination activities will be performed – including the organization of one workshop at Greece, Bulgaria and Cyprus and one additional conference at Greece at the last month of the project – in order to effectively disseminate project's activities and outcomes to the target groups and all stakeholders. Finally, a set of exploitation tools will be developed, giving guides to stakeholders and especially companies and VET providers, on how they can exploit the project's results.

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1 Introduction

After the end of the transversal modules you will be able to:

- ✓ Communicate effectively with colleagues and clients and present effectively
- ✓ Understand and manage changes in your working environment
- ✓ Work within teams more effectively and promote the formation and development of teams at work
- ✓ Set goals in your professional life
- ✓ Adopt a creative behaviour and be creative while providing solutions to your clients

2 Explanation of symbols

For the facilitation of your study the icons below are introducing to you some different activities in this document

	Theory – Information
	Did you know
	Additional information from external resources (links, video)
	Reflection exercise
	Activity for application
	Learn with your peers

	Review
	Self assessment

3 Module: Effective Communication and Presentation (TS-EM1)

Communication, in its true sense, involves a lot of things, the ability to listen, understand, contemplate and put across the right message to the audience in a suitable way. All these aspects of the communication process play a vital role when working in ICT sector. An ICT professional should be able to understand the needs of clients, and deliver the appropriate solutions to them. Furthermore, an ICT professional should have both technical and communication skills in order to be able to work in a globalised environment and successfully operate in the organizational settings of an ICT company.

"Facilitating good communication patterns on a team not only gets the work done, it also ensures your team is high performing and happy" (Dave Smith, Director of compute/network/storage engineering at DigitalOcean)

Communication is a complex process that takes place at both verbal and non verbal levels. Its effectiveness depends on a number of factors such as the ability to skillfully encode and decode messages at both levels as well as on the appropriate way of identifying the factors that affect communication whatever to their nature and adopting the appropriate reaction. This module presents characteristics and principles of communication and presentation, barriers of communication as well as ways and principles to make communication more effective. It is important to remember that no single aspect can be considered as the key towards successful communication. Their interaction and combination is the factor that determines the outcome of communication.



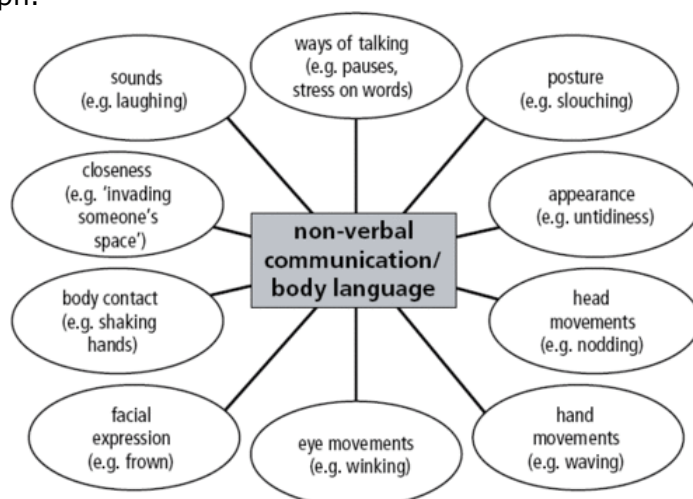
Verbal and Non Verbal communication

Verbal communication is the sharing of information (message) between a person who send (sender) and the recipient (receiver) of the information by using a medium (spoken language, text, etc). There are some important factors that should be taken into account in verbal communication (Robbins & Decenzo, 2001):

- The **formulation of the message**: the message should be clear, coherent, complete, and all important information should be included.
- The **medium**: clear and correct pronunciation and articulation, grammar and syntax and fluent expression are important.
- The **receiver**: the linguistic register, message complexity, and courtesy

level should be appropriate for the particular receiver in the given context. There should be consideration for the receiver's viewpoints, background and mind-set.

On the other hand **non verbal communication** is the system of symbolic behaviors that includes all other forms of communication except words. It reveals a lot for emotions, reactions that often are not expressed at verbal level. Non verbal messages can often be unintentional and spontaneous. Many people tend to rely more on non verbal cues rather than on spoken words. The aspects of non verbal communication are presented in the following graph.



Source: [http://1.bp.blogspot.com/-](http://1.bp.blogspot.com/-CM1qypi2Hco/U4vRZKIpnMI/AAAAAAAAIaY/6RPPqL4v29q/s1600/NonVS.gif)

[CM1qypi2Hco/U4vRZKIpnMI/AAAAAAAAIaY/6RPPqL4v29q/s1600/NonVS.gif](http://1.bp.blogspot.com/-CM1qypi2Hco/U4vRZKIpnMI/AAAAAAAAIaY/6RPPqL4v29q/s1600/NonVS.gif)

Non verbal signals are not always easy to interpret, since there are cultural differences and sometimes they are confusing or incongruent with verbal messages. But when they match up with the words you are saying, leads to trust incensement, clarity and rapport. When they don't match, they generate tension, mistrust and confusion.



Did you know that body language signs mean different things in different cultures?

In some cultures it is insulting to make eye contact. In others it is acceptable to speak very loudly. When speaking to people from different cultures keep in mind that their norms of communication may be different from yours. You may need to ask them what the meaning of certain non-verbal signs means

to them and explain the meaning in your culture.



Watch this slide presentation to learn more about body language

Understanding and Interpreting Body Language

Read more about communication in ICT environments

How important are communication skills for information technology jobs?



Observe other people around you talking. Analyse the three factors of verbal communication. Was something wrong in this communication regarding these three factors?



Now that you have learned more about verbal communication and body language, observe yourself, regarding the importance you give to the adoption of postures, expressions, gestures.

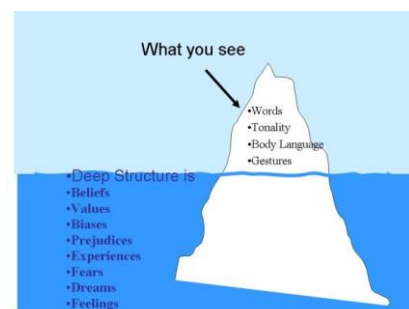
Observe other people that are working around you and check on how they adopt postures, expressions, gestures. Do these descriptions fit to what you understand/know about them? What do you conclude about the interpretation of body language?

How can you apply it when you are serving clients and communicating with your colleagues?



Significant factors affecting communication

The way that people communicate is based on their values, beliefs, intentions, mindset, relations, educational level, background etc. What we see and understand from other people is based on the structure of these factors.



Source: <https://zestnzen.wordpress.com/2012/01/26/how-to-understand-cross-cultural-communication/>



Barriers to effective communication

When two or more people are communicating the communication procedure is often disturbed by several interferences, also called “noise”, and other barriers as listed in the following table (Goman, 2011; SESBA, 2017):

Barriers to perception	<ul style="list-style-type: none"> – Allowing themselves to see what they want to see, using only small amount of information (stereotyping & generalizing) – Jumping to assumptions and conclusions without looking into details; reality is usually more complex – Focusing only on negative aspects – Inconsistency between verbal and non verbal cues <ul style="list-style-type: none"> – Assuming that all people involved in a discussion interpret in the same way
Barriers to communication	<ul style="list-style-type: none"> – Language differences: even people speaking the same language may have differences in understanding depending on their age, education, profession, origin etc. – Bad command of common business language – Using too much technical jargon when communicating with clients – The use of inappropriate grammar, vocabulary or technical language – Interruptions, ignorance, responding in irrelevant ways, criticism – Lack of confidence; a person lacking self confidence might not have the ability to articulate viewpoints and opinions. On the opposite overconfidence may lead to manipulation and unpleasant behavior – Different preconceptions, stereotypes, attitudes, – Environmental or physical conditions, telephones ringing, other people talking, crowded conditions, extreme temperatures, bright lights, etc. – Physiological noise: refers to distractions caused by hunger, fatigue, headaches, medication, and other factors that affect how we feel and think
Cultural differences	<ul style="list-style-type: none"> – Cultural differences that have great impact on communication and service provision are the perception of time, message clarity and the degree to which emotions are expressed – In Scandinavian, German and the English-speaking countries time is viewed as something that should be controlled. People focus on the sequence of tasks and deadlines are to be adhered to. In Mediterranean countries time is rather viewed as a constant flow.

	<p>Different items may be dealt with at the same time, while deadlines tend to be much more flexible</p> <ul style="list-style-type: none"> - In cultures such as Mediterranean, Slav, Central European, African, Arab, Asian people prefer to leave part of the message unspecified, expecting the listener to understand the full meaning through context, nonverbal cues, and between-the-lines interpretation of what is actually said. This may be very confusing and disturbing to people from Germanic and English-speaking countries where messages have to be clear, explicit and specific. - In some cultures emotions are expressed not felt; in others task orientation is of greatest importance or maintaining good relations and avoiding conflicts
Challenging behaviours	<ul style="list-style-type: none"> - Some people behave in a way that makes communication a real challenge, these kinds of behaviour are a result of deeper psychological issues. - Aggressive people express their feelings and opinions and advocate for their needs in a way that violates the rights of others, being abusive, dominant, over-critical etc. - Passive people avoid expressing their opinions or feelings, protecting their rights, and identifying and meeting their needs - Passive – aggressive people tend to express their negative feelings harmfully, but indirectly. Instead of dealing with issues, they behave in ways that veil their hostility and mask their discontent



Read a useful article about communication across cultures

[Communicating across Cultures](#)

Watch this video related to cross cultural communication

[Cross- cultural Communication](#)

Learn more about challenging behaviors

[The Four Basic Styles of Communication](#)



Have you ever been at the position to deal with some challenging behavior? What did you do? How are you going to react, after having read this material, if you face this behavior again?



Active listening

Listening is one of the fundamental parts of communication. Active listening is something more than just hearing the spoken words, it is about listening with all senses (Pande, 2016). It enables the connection between the speaker and the listener, which leads to interaction and ensures that the messages are transmitted effectively.

An active listener is fully concentrated to what speaker says in order to understand it and demonstrates that he/she does so. Active listening means (SESBA, 2017):

- Totally being involved in listening
- Paying attention by not speaking, focusing on speakers verbal and non verbal signals, avoiding distractions, wait until the speaker has finished.
- Conveying attention and interest with gestures / body language
- Understanding, making efforts to get the meaning, its implications, feelings
- Remembering what has been said
- Providing the appropriate feedback, confirmation and further questions



The following link provides some tips for you to become a better listener

<https://www.ragan.com/flowchart-are-you-a-good-listener/>

Watch this video on how you can improve your listening skills through active listening

[Improve Your Listening Skills with Active Listening](#)



Test yourself in active listening

After having read this material, for the next 2 days try to observe your listening behaviour at work and in informal settings. Check the following:

- *How often have you been distracted by other activities while listening? How do you deal with these distractions?*
- *How is your eye contact with the speakers?*
- *How often do you catch yourself thinking of a reply before the speaker has finished?*
- *How often do you ask for clarifications or paraphrase to make sure you have understood?*

After becoming conscious of your listening skills, set specific goals for

improvement! You might also ask a friend or colleague to provide feedback!



Do the following simple exercise with your peers. One of you is partner A and the other one is partner B.

Partner A (speaker) : Share something with partner B related to your job, something that you are passionate about

Partner B (listener): do everything impossible to ignore the speaker

Take 90 seconds to do so

What were the feelings of both partners?

Then change the roles, partner B will be the speaker and partner A will be the listener

The listener should listen to the story of the speaker like it is the most wonderful amazing thing he/she have ever heard in his/her job

Take 90 seconds to do so

What are your thoughts and feelings at the second time?



Principles of effective communication

By learning how to cope with the distractions mentioned above and taking into consideration the principles of communication you will become more able to properly encode and decode messages and more successful in collaborating with your colleagues and clients (SESBA, 2017, Paulo nd):

- ☞ Analyze your audience and make sure that receivers understand the language you use. Ask whether the other person has knowledge on the subject of discussion
- ☞ When you are communicating with clients try to realize why they are thinking in a particular way
- ☞ Use the right language, do not assume that the person you communicate knows the IT terminology, try to convert technical jargon into a language that all can understand if needed
- ☞ Use business or real life examples to explain technology when communicating with clients
- ☞ Do not focus on complexity when you communicate with clients and try to learn some business terminology in case you address business clients
- ☞ Be patient and diplomatic when responding to clients, use the right

words to give the message

- ☞ Ask effective questions to maximize information gathering. Try to understand how to translate business ideas into technical design and discuss this with business people
- ☞ Be aware that accenting and intonation can cause meaning to vary significantly
- ☞ Focus on the issue, being polite, positive and affirmative
- ☞ Be genuine, valuing yourself and your experiences
- ☞ Wait the noises to eliminated if possible
- ☞ Listen actively
- ☞ Analyze your own perceptions
- ☞ Take your time before drawing conclusions
- ☞ Increase your awareness on perception barriers
- ☞ Identify any challenging behavior and establish a trusting atmosphere of mutual respect and healthy exchange of messages by staying calm, identifying the cause, using language carefully, depersonalizing and shifting from reactive to proactive behavior
- ☞ Cope with cultural differences if any, trying to understand how people tend to behave, listening even more carefully, asking confirmation of understanding if there is any doubt, being mindful on how the worldview and values of different groups of people affect their communication



The following link provides you with some tips to communicate more effectively

[How to Manage Passive-Aggressive People](#)

[Dealing with Non-Assertiveness](#)

[The 7 most important communication skills an IT leader should have](#)

[Communication skills – How important is it in the IT industry](#)

[Communication Skills for IT Professionals: Do's and Don'ts](#)

Watch also the following videos

[Think Fast, Talk Smart: Communication Techniques](#)

[Customer Service Skills for IT Professionals: Communication](#)



Effective presentations

By making a presentation any person totally puts him-/herself on public display. More than a well written presentation is needed for a presenter in order to make the necessary impact, since the audience not only respond to the presented ideas but also to the way that the presenter uses his/her voice and body.

When you are making a presentation you should deliver your ideas in a lively, flexible and interesting way.

Read the following guide provided by University of Leicester for delivering an effective presentation

[Delivering an effective presentation](#)



Successful presenters understand that what the audience sees in a presentation makes a stronger impact than the words they hear.

Rosenthal Bill, 2010, www.forbes.com



The following links provide some additional useful advices on how to make effective presentations

[Making An Effective Presentation](#)

[Top Tips for Effective Presentations](#)

[20 Ways to Improve Your Presentation Skills](#)

You can also watch the following video

[How To Organize And Make An Effective Presentation](#)



Your last meeting with a client didn't go as desired (think of a real situation you have encountered). You have the impression that your client didn't really understand the IT solution you proposed for his business. Now you have another chance and this meeting will be crucial: If communication fails again, you have lost your clients.

- Reflect on your last meeting: How would you evaluate communication at verbal level? Can you identify the moments where things seemed to go better or worse?
- Reflect on non-verbal communication: Can you remember characteristic non-verbal messages of your interlocutor? How did you consider him during your meeting? Have you been aware of the non-verbal messages that you were sending?
- Analyse the client: Was the client difficult to communicate with? Was dominating the discussion?
- Plan ahead: How can you maximize impact of verbal communication on your behalf? What non-verbal messages needs to be prioritised into the future?



After having completed this module think:
Which three communication skills do you want to improve? Why?
How are you going to employ self-awareness and feedback in order to achieve your goal?



Answer the following questions

1. Body language and non verbal cues (choose all that applies):
 - a. Are the most important key to effective communication
 - b. Can be controlled and manipulated in certain cases
 - c. Have a universal interpretation that can be perfectly mastered
 - d. Are involuntary and beyond our control in certain cases
 - e. Are subject to cultural differences

2. Active listening is important because (choose all that applies):
 - a. It helps build trust and rapport
 - b. It speeds up communication
 - c. It ensures mutual understanding
 - d. It leads to more relevant responses
 - e. It increases chances of agreement

3. Stereotyping and jumping to assumptions are typical:
 - a. Perception barriers
 - b. Challenging behaviours
 - c. Cultural barriers

4. Language barriers are more likely to occur when (Choose all that applies):
 - a. Speaker and listener use a common language other than their own
 - b. The educational level of the speaker and the listener differs
 - c. The speaker is interrupted
 - d. All the above

4 Module: Change Management (TS-EU2)

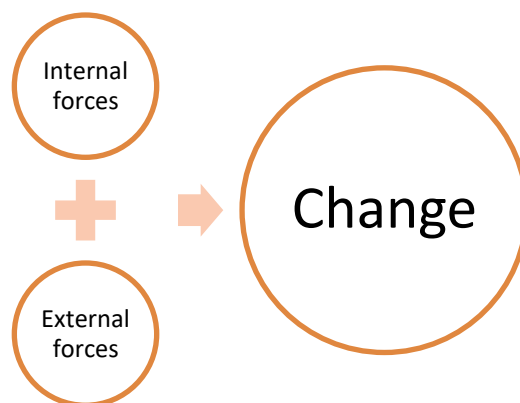
Change happens, is one of the most inevitable aspects of business and life. Any business in today's fast moving environment faces a lot of challenge; thus change is a requirement in order to remain competitive, meet customer needs, survive and grow. Change is something that should be embraced rather than feared. Only changing organizations can lay the foundations for long term success.

Within this module the factors that impose changes and benefits of change will be discussed. Practices for developing resilience to change will be presented as well as procedures and practices of managing changes.



Understanding change

Change, within organizations, is the alteration on environment, structure, technology, or people (Robbins & Decenzo, 2001). Changes usually happen in response or are the result of pressures imposed by several forces.



External forces: originate from various sources such as market place, government law and regulations, technology, economy, customer needs, etc.

Internal forces: originate primarily from the internal operations of the organization or from the impact of external changes on it, and could refer to job performance, redesign of jobs, need for new training, new interaction patterns within work groups etc.

The benefits of organizational change are shown in the following figure. It should be mentioned that the main actors of change within organizations are

the employees. If they are unsuccessful in their personal transitions or do not embrace and learn new ways of working, any changing initiative will fail.

If they embrace and adopt required changes, the expected results will be delivered.



Source:

<https://marketbusinessnews.com/financial-glossary/organizational-change-definition-meaning/>



Think what changes have occurred in your organization recently. Try to identify the internal and external factors that forced these changes.



Learn more about changes in the following links

[Why Is Change Important in an Organization?](#)

[What is organizational change? Definition and meaning](#)

You can also watch the following video

[What is Organizational Change?](#)



Think about any changes that you have been asked to follow in your job position.

How did you feel when these changes were announced to you?

Did you follow these changes? If not, why?



Change is not the problem – resistance to change is the problem

<https://www.torbenrick.eu/t/r/bgk>



Resistance to change

Most people hate changes for many reasons (Robbins & Decenzo, 2001). There are people who believe that changes lead to ambiguity and uncertainty for the known, and are getting stressed. Others are concerned about their personal loss, since changes threaten any investment in the status quo. The more people have invested in the current system the more they resist change. While others might believe that change is not in the organizations' best interests.

The eight most common beliefs and reasons that people resist change

1. There isn't any real need for the change
2. The change is going to make it harder for them to meet their needs
3. The risks seem to outweigh the benefits
4. They don't think they have the ability to make the change
5. They believe the change will fail
6. Change process is being handled improperly by management
7. The change is inconsistent with their values
8. They believe those responsible for the change can't be trusted

Source: <https://www.torbenrick.eu>

There are several tactics that have been proposed for dealing with the resistance to change within organizations by managers or change agents, including education, communication, participation, facilitation, support, negotiation, manipulation etc. (Robbins & Decenzo, 2001)





Imagine that your organization has just initiated a project of re-organization. You know that you will still have a job, but you will have a new manager, most of your team members will be new, and what you are actually doing is likely to change substantially.

If this scenario actually happened, what would your reaction be?

What questions would you have?

What would you say?

What would you do?

What would your internal dialogue be?

Would you find yourself without any energy or motivation?



Resilience to change

The situation described in the above reflection exercise is quite common in business in today's world, and may impose some employee to question his/her abilities regarding his/her job performance and professional life. Because these situations are frequent, employees must find ways to become resilient to changes. Some advices on how you can be more resilient to change when it comes are listed below (Boyd, 2014; Morgan, 2017):

- ✓ **Awareness:** be more aware of how you respond to changes and how the others around you respond; by doing this you may begin to understand behaviors
- ✓ **Cultivate your ability to reduce stress:** it is important since changes are often accompanied by stress that can affect your performance both at work and home
- ✓ **Choose a positive mindset:** see the opportunities, realize the abundant possibilities and options; treat any setbacks as opportunities to build your inner strength
- ✓ **Have a clear set of values:** they can work as guiding principles to allow you to spend time and energy on what is important to you
- ✓ **Focus on the learning process:** changes give the opportunity to grow and learn new skills. Getting out of your comfort zone feels awkward and uncomfortable. But discomfort leads to growth. Instead of getting discouraged about things you do not know try to focus on what you are learning as a result of change
- ✓ **Think flexible:** make your thinking pattern more flexible, in order to

start the action. Move away from black and white terms, explore out-of-the-box possibilities, connections and options

- ✓ **Practice taking risks:** every day at work do something that is a bit out of your comfort zone.
- ✓ **Create structure and systems:** by this your mind and energy are free to focus on important issues
- ✓ **Be open to help:** create a support network that you can reach out to, remember to be grateful and reciprocate the support in the best way



Learn more about resilience to change in the following links

[Remaining resilient through change](#)

[Ways to build resilience during times of change](#)

[Resilience in change](#)

[How to build resilience in organizations undergoing change](#)



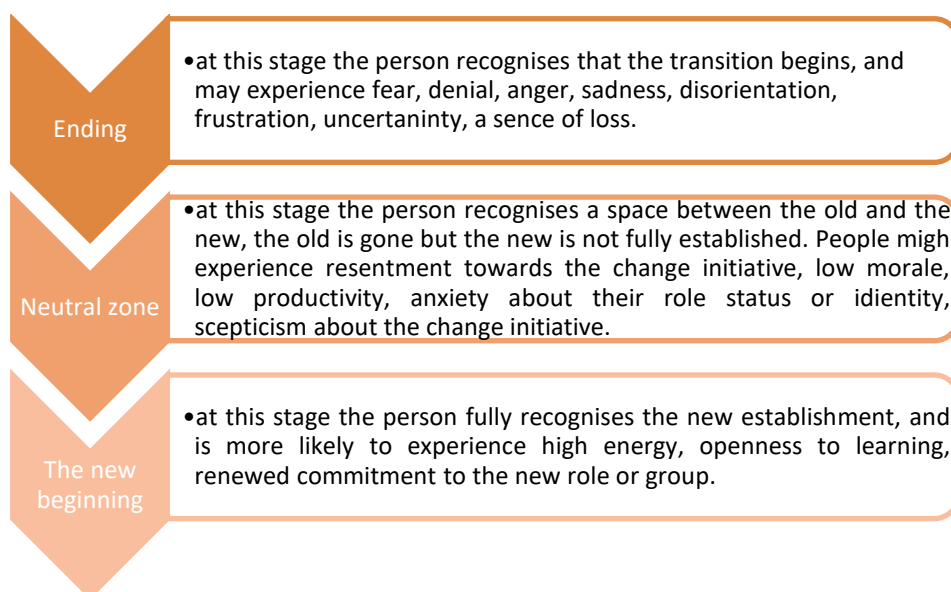
Now that you have learned more about resilience to change, what would you have done differently the last time that you faced changes in your job?



Transition through change

Within a changing process, transition is the internal psychological process of adapting to the new situation (Center for Creative leadership, nd). In other words, it is the process of moving successfully from the old to the new. According to a well known model (Bridges, 1991)¹ transition involves three stages:

¹ <https://www.mindtools.com/pages/article/bridges-transition-model.htm>



All people go through these phases of transition, but the duration of each phase varies according to the type of the experienced change and personality. The understanding of the phase that people around us are in is the key to working well as a team and the changing process to be successful. Read in the following link some tips on how to navigate the 3 stages of transition.

How to Transition Through Change



Use the next table to map the changes you are dealing with in your work life:

Past (18-24 months)	Current	Future (18-24 months)

Then choose one change of each column and answer the following questions:

1. What is your response to the change?
2. In which stage are you right now?
3. What could you do to address your needs during this change?



Learn more about transition through change in the following links

Bridges' Transition Model



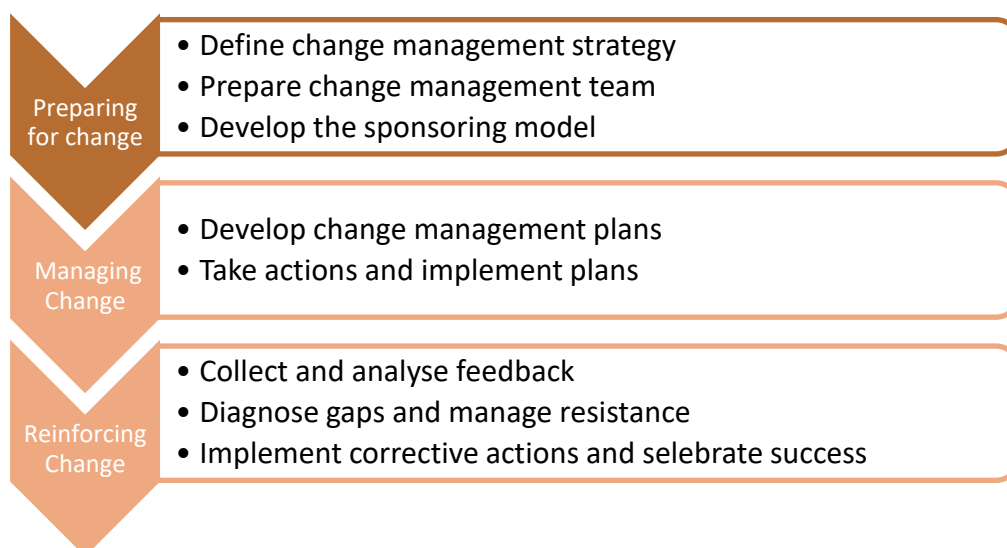
Some tips for dealing with transition

Denial	Listen, seek, ask
Resistance (endings)	Ask, express, mourn, seek support
Exploration (Neutral zone)	Seek control, understanding, support, purpose, plan, participate
Commitment (New beginning)	Develop knowledge and skills, celebrate success
Get ready for next changes	Reflect on experience and develop strategies



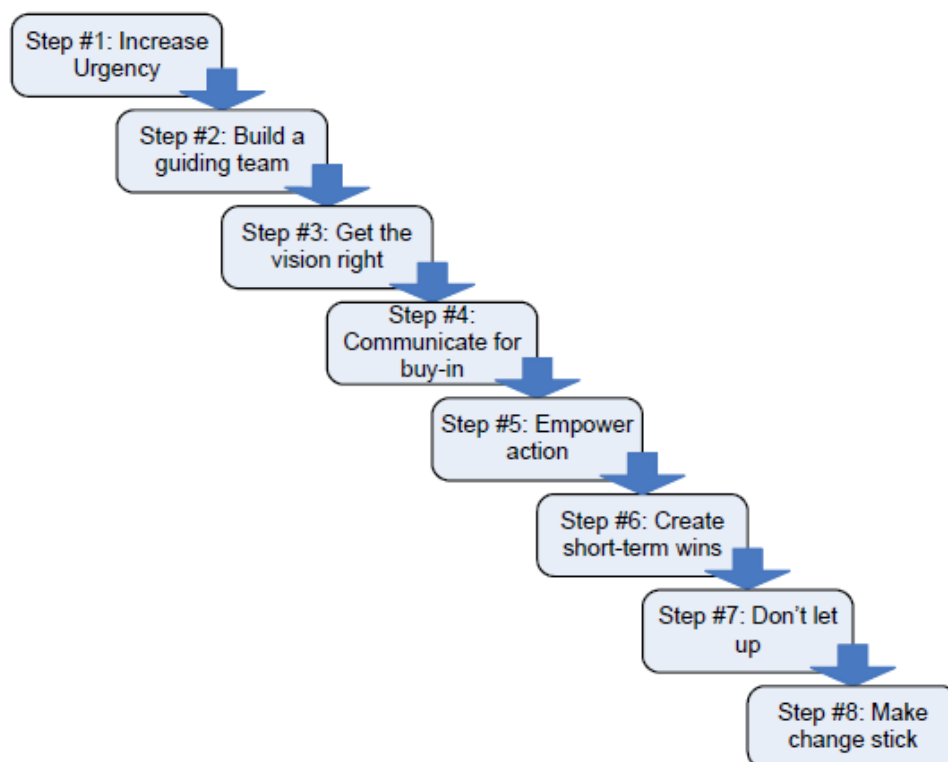
Change management

Change management can be considered as the structured approach to transitioning individuals, teams and organizations from a current to a desired future state, to fulfill or implement a vision and strategy (Ryerson University 2011). It is a process within an organization aiming at the empowerment of employees to accept and embrace changes in their current environment. The change management process contains certain steps, as shown in the following figure (Passenheim, 2010).



Many change management models have been proposed in the literature. Kotter (in Reyson University, 2011) suggests the following eight steps for

successful organizational changing.



Source: Change management leadership Guide 2011.

Visit the following link in order to learn more about these steps

[Change Management Leadership Guide](#), pages 11-14



Learn more about management of change

[What is change management](#)

[Definition of change management](#)

[Understanding Change Management Processes](#)

[8 Elements of an Effective Change management Process](#)

[10 Principles of change management](#)



Effective organizational change is rooted in a healthy realistic perspective on personal change, David Firth

<https://www.adelaide.edu.au/hr/docs/pdp-nav-change-transition.pdf>



In a study conducted in 2008 by IBM, CEOs identified the top challenges to successfully implementing strategic change as:

1. Changing mind-sets and attitudes (58%)
2. Corporate culture (49%)
3. Underestimation of complexity (35%)
4. Shortage of resources (33%)
5. Lack of higher management commitment (32%)
6. Lack of change know-how (20%)
7. Lack of motivation of involved employees (16%)

<https://www.adelaide.edu.au/hr/docs/pdp-nav-change-transition.pdf>



A real case

Home Depot had launched its Six Sigma² program in 2001, but by 2007 stock prices dropped by around 8 percent when former CEO Robert Nardelli resigned. The company also dropped from the top spot on the American Customer Satisfaction Index rankings among major retailers to the bottom in 2005. The ouster of Robert Nardelli was seen by many as proof that the Six Sigma methodology does not work in improving either the top line or bottom line for a company. However, 60 percent of all Six Sigma initiatives fail because of poor change management, according to a renowned Six Sigma author and consultant who has been involved with Six Sigma since the early 1980s.

An article that appeared in the destination CRM webzine titled "Six Sigma: What went wrong?" very succinctly summed up the reason behind the failure as, *"At Six Sigma locations, a sizable gap may exist: While it might be clear what type of change is needed to technically enhance throughput, the success of that effort hinges on whether that behavior is modified permanently. Process improvements may perfectly achieve their objectives, but the workforce may not be prepared to accept them as part of their daily routines."* It is this lack of initial acceptance of the program that probably produced results that were sub-optimal compared to the expectations and led to the former CEOs ouster.

It is very important to mention though that the Six Sigma program at Home Depot did not die with the exit of Bob Nardelli. A quick search of the Home Depot Career link in November 2011, gave thirty-seven posted positions that

² <https://asq.org/quality-resources/six-sigma>

required some level of Six Sigma knowledge.

Source: <https://www.leansixsigmaexperts.com/change-management-models-william-bridges%E2%80%99-three-phase-transition>





Answer the following questions

1. Changes within organizations are responses to pressures forced by external factors
 - a. True
 - b. False

2. The way and duration of transition phases depend only on the kind of the experienced change
 - a. True
 - b. False

3. Change management has to do with the implementation of actions at initiative level and provides the steps and actions to implement change
 - a. True
 - b. False

5 Module: Team Working (TS-EM3)

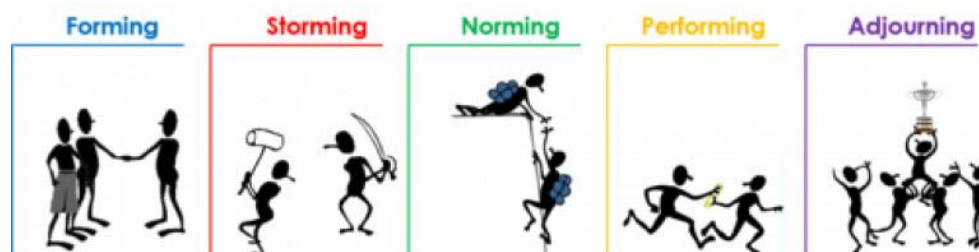
In simple words a team is a group of people working together in order to achieve a common goal, and team working is linked with innovation and business performance. But work teams do not just happen, they need to be built. There are many models that provide stages of team and team working development, therefore further knowledge is needed regarding team effectiveness and team leadership. Teams in organizations are too important to let them be developed by accident. This module will help you to find out how teams are built and how they can perform well.



Formation and development of teams

Some people believe that the formation of teams happens naturally, but this is not applicable in all cases. Whatever the settings or characteristics of the environment in which a team is developed, the efforts of all of its members are required for its formation.

The formation and development of teams usually follow some stages, as seen in the following figure and proposed by Tuckman & Jensen's theory (1977).



Source: <https://www.workstyle.io/stages-of-team-development>

Visit the following link in order to learn about the stages of team formation

The Five Stages of Team Development

Most of the teams go through these phases. Thus, by understanding this pattern, some behaviour during the formation of a team can be explained and the work towards the formation of a team can be empowered.



Learn more about the development of teams in the following link

The Five Stages of Team Development: A Case Study

And watch the following video

Forming, storming, norming, performing, and adjourning (as told by the Fellowship of the Ring)



Think of a team that you have recently been involved with. Try to consider the development of this team answering the following questions.

- *What was the task of the team?*
- *Did all members share the same expectations of the task?*
- *Did you all have the same attitude to working in the team?*
- *Did you personally feel any anxiety?*
- *Was there any conflict in the team?*
- *Did you all agree on the means of carrying out the task?*
- *Did you have a leader and was his/her authority challenged?*
- *Did any team member withdraw from the team?*
- *Did you move on to agree methods of working?*
- *Did you have any common goal?*
- *Did you cooperate with each other?*
- *Did you work out how to proceed at all?*
- *Did everyone take on a functional role to achieve the task?*
- *Did you work constructively and efficiently?*
- *Did the team's activity focus on fulfilling the task?*
- *Did you experience a sense of achievement?*
- *Did you stop abruptly and all go your separate ways or did you finish the task and then go off together and socialize?*
- *Did you talk about the team and your experience of it?*
- *What sort of issues did you discuss or think about after the team activity?*
- *Was it more or less acceptable to give and receive feedback in a relaxed atmosphere when adjourning?*

You have just analyzed the stages of team formation; did you recall any evidence of any stages? You probably get some idea if your team was

processing well or not. There are teams that remain at the stage of formation and find it difficult to achieve their goals.

If your group is just beginning to be formed, the above questions might help you to recognise the stage of your team, which may help or hinder you from progressing to the next level.

It might also be useful to discuss with your team members how best to move forward.



The role of teamwork

A team can be defined as a social system of three or more people, which is embedded in an organization (context), whose members perceive themselves as such and are perceived as members by others (identity) and who collaborate on a common task (teamwork) (Hoegl & Gemuenden, 2001).

"Behind every great product is a great team" (Zimmer, 2019)

Teams and teamwork have become a central part of today's work life and can happen in-person or online. It is more a means to a synergistic way of working, where the sum is greater than the parts. It maximizes the strengths of each member, bringing out the best of them, while unique individual strengths are complimented by the others' strengths.

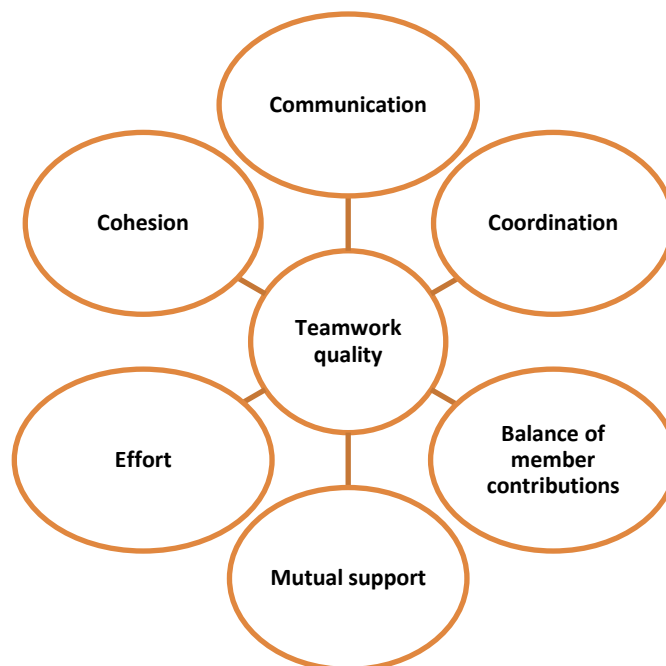
Teamwork is important for several reasons (Zimmer, 2019; www.the-happymanager.com):

- ✓ Creates synergy and distributes the workload
- ✓ Increases efficiency by taking more complex tasks
- ✓ Improves communication by facilitating open discussion and cooperation among members
- ✓ Maximizes the output by leveraging each team member's strengths
- ✓ Drives company's growth and boosts performance
- ✓ Supports more empowered ways of working
- ✓ Fosters flexibility and responsiveness to change
- ✓ Promotes idea generation, increases innovation and creativity, by allowing team members to bring unique perspectives on the table

- ✓ Promotes leaner organizational structures with less hierarchy
- ✓ Encourages multi-disciplinary work
- ✓ Satisfies customers who like working with teams
- ✓ Promotes the sense of belonging, achievement, equity, camaraderie which are essential for motivated workplaces
- ✓ Provides opportunities for personal growth
- ✓ Supports social networks which encourages happiness and performance

Enabling conditions for successful teamwork are robust structures, supportive environments and compelling directions coupled with a shared mindset (Zimmer, 2019).

The quality of teamwork depends on several facets that capture both task-related and social interaction; these facets are presented in the following figure.



Source: adapted from Hoegl, M & Gemuenden, G. (2001) "Teamwork quality and the success of innovative projects: A theoretical concept and empirical evidence". *Organization Science*, 12(4):435-449



Think of a team at work that you have recently been involved with. Answer the following questions in order to consider the quality of this team:

Was communication sufficiently frequent, informal, direct and open?

Were individual efforts well structured and synchronized within the team?

Were all team members able to bring in their expertise to their full potential?

Did team members help and support each other in carrying out their tasks?

Did team members exert all their efforts to the team's task?

Were team members motivated to maintain the team? Was there a team spirit?

How would you characterise the quality of teamwork within this team?



Learn more about the importance of teamwork in the following links

[Important Reasons Why Teamwork Matters!](#)

[The importance of teamwork. We all know teamwork is great. But why?](#)

[The importance of teamwork \(as proven by science\)](#)

[What is team working?](#)



Characteristics of effective teams

A team is distinct from a group of people when there is a common purpose, team identity of its members, independent functions, and agreed norms or values which regulate behaviour (Charles Sturt University, 2008).

But what makes a team effective?

In organizational settings the existence of effective teams depends both on supportive organizational structures and individual contributions (Mickan & Rodger, 2000).

In more detail, further prerequisites or suggestions for effective and successful teams are listed below (Abudi, 2010; Thomas, nd; Hoegl & Gemuenden, 2001; Mickan & Rodger, 2000):

- ✓ High degree of mutual trust and support characterised by a genuine concern for each other
- ✓ Open, honest and clear communication
- ✓ Clear and common purpose, mission and objectives that are clearly understood by all members
- ✓ Talented members, that are recognised and developed further
- ✓ Clear and valued roles
- ✓ Accepted and shared leadership
- ✓ Solid relationships
- ✓ Consensus among all team members
- ✓ Optimal team size
- ✓ Commitment to the work/project and to the other members of the team and accountability
- ✓ Positive, supportive working relationships among all team members
- ✓ Recognition, rewards and accountability
- ✓ Effective team processes and positive group dynamics
- ✓ Organizational environment characterised by supportive respect for individual differences
- ✓ Conflict controlled and worked through
- ✓ Regular brainstorming with all members participating
- ✓ Problem solving done by the team
- ✓ Effective and inclusive regular meetings
- ✓ Timely hand off from team members to others to ensure that the work/project keeps moving to the right direction



Learn more about effective teams in the following links

[Characteristics of Effective Teams](#)

[Characteristics of effective teamwork](#)



Identify 3 practices that you would like to implement inside your work team to make it more effective. Try to be specific and think in practical terms.



Setting common goals

Most teams exist because their goals cannot be achieved individually or because certain human needs can be satisfied through working with others. The effectiveness of a team depends on its ability to meet the goals set and to satisfy the needs of its members (National Research Council, 2015).

As mentioned before, in order for a team to function effectively it must have clearly defined common goals and its members should be committed to them. All members of a team should have common goals, otherwise the team becomes a group of individuals following their own agenda (www.ecuanimityexecutive.com). Teams come together as an effective unit more quickly when they have a challenging and meaningful goal to achieve (www.the-happy-manager.com).

Common goals are important for several reasons (Thomas, nd.; www.the-happy-manager.com, www.ecuanimityexecutive.com; www.inside.6q.io), as they:

- ✓ Enable the team to clarify what the meaningful results are
- ✓ Develop creativity and innovation and bring people together encouraging them to communicate problems and results.
- ✓ Ensure that all team members understand their role, thus boosting engagement and productivity
- ✓ Help in shaping the future direction for the organization
- ✓ Assist in building commitment about the future direction for the team
- ✓ Provide the foundation for accountability and performance
- ✓ Assist in mobilizing people and resources toward goal attainment

How to set common goals?

Goals should be demanding because people are usually motivated by challenging goals. They should also be specific. But it should be mentioned that too specific goals do not allow the flexibility to achieve things differently in the context of changing situations.

The members of the team should be involved in goal setting process; the more they are involved the greater sense of commitment and ownership they have.

Team goals should motivate the team, fit individual roles and be aligned

with the objectives of the company. Effective team goal setting involves the following steps³:

- ✓ Identification of what has to be achieved
- ✓ Goal setting at team level
- ✓ Providing the ability to the members of the team to develop their own goals sitting underneath of the team goals
- ✓ Creation of an action plan for the implementation of the goals, including deadlines
- ✓ Division of the action plan among the team members
- ✓ Progress tracking on goals and reviewing
- ✓ Support to members to achieve their goals
- ✓ Learn from mistakes



Learn more about setting team goals in the following links:

[Team goals – why having common goals is important](#)

[How to set goals for your team](#)

[Most common goal setting mistakes](#)

[How to set team goals](#)

[Setting team goals and objectives](#)

[Setting team goals](#)

[7 ways to set team goals \(that actually work\)](#)

[Team goal setting](#)

And watch the following video

[Team goal setting](#)

³ <https://blog.impraise.com/360-feedback/how-to-set-goals-for-your-team-performance-review>



Developing a team

When developing a team it is very important to acknowledge the different roles that any person can take on in a team. According to Belbin's model (2011) these roles are:



Source: <https://3rconsultants.eu/2018/04/20/effective-team-management-with-team-roles-of-belbin/?lang=en>

Learn more about these roles following the link below

<https://www.belbin.com/about/belbin-team-roles/>

Belbin's model about the 9 roles can be a very useful tool for team development, and here are some tips for a team leader:

- Get to know your team members, their strengths along with their preferred roles
- Research shows that the most effective teams involve all the nine roles; the more roles you involve the better the effectiveness of the project/task/goal
- Be familiar with each and every role separately and the pros & cons they bring to the team
- Try to keep in balance the different roles within the team

- Team roles are not static. They may differ with regard to the context within they are being implemented
- Every team member can assume more than one role
- There is no "ideal" team - so do not spend your time trying to create one.

When developing a team it is also important for team leaders to help their teams to move through the various stages of team development as described in the previous paragraph.

Read the following article and find out what a leader should do in each stage of team development

The stages of group formation, and how they aid your team success



Learn more about Belbin's Team Roles watching the following video

Belbin's Team Roles



Learn more about team development

5 Essential steps to develop your team

and how to develop high performance teams

Developing and Sustaining High-Performance Work Teams



Study the following paper in order learn more about the development of virtual learning teams

Team development and group processes of virtual learning teams



Identify the stage of the team that you are currently working in at your job and try to propose some of the strategies that could enhance the progress of your team if followed by the team leader.



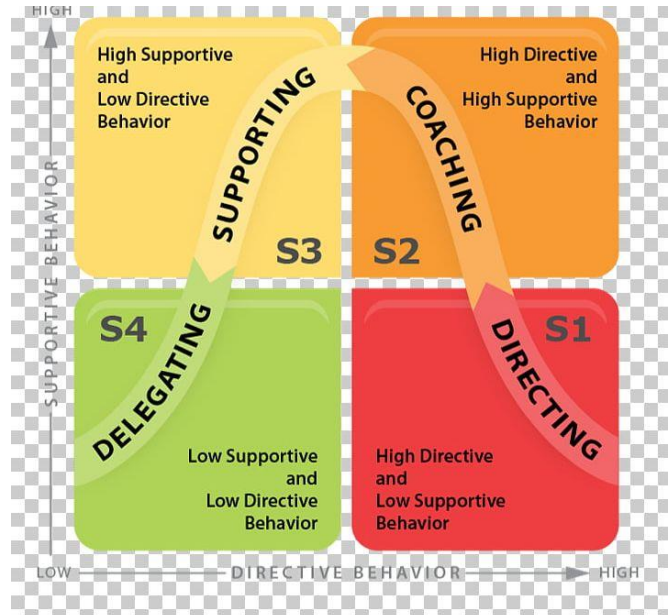
Team leadership

Team leadership presents one of the characteristics of effective team performance. From the functional point of view (Zaccaro et al., 2001) leadership is the process of diagnosing problems that could impede group goal attainment, generating and planning appropriate solutions and implementing them within complex social domains. The success of a leader defines team directions and organizes team progress that contributes significantly to team effectiveness (Zaccaro et al., 2001). The role of a team leader is team oversight, helping the team to accomplish its goals by monitoring, diagnosing and acting (McMaster, 2014).

Visit the following link to learn more about what team leadership is:

What is team leadership?

Different combinations of directive and supporting behaviour generate different leadership styles as shown in the following figure. These combinations depend on the needs of individual team members, their level of competence and commitment to the team.



<https://imgbin.com/png/TG7RNqY/situational-leadership-theory-leadership-style-management-coaching-delegation-png>

Visit the link below for more information regarding the leadership styles

Essential types of leadership styles



Learn more about team leadership in the following links

[Leading teams today](#)

[The 10 Effective Qualities of a team leader](#)

[13 Characteristics of a high performing team \(and how leaders can foster them\)](#)

[Team leadership model](#)

[Team leadership techniques that will inspire your team](#)

[What is a team leader?](#)

[5 different types of leadership styles](#)

And watch the following video

[Team leadership](#)

[How to Be an Effective Team Leader](#)



If you have ever lead a team, record your leadership style and briefly summarise any implications it had within your team

Effective communication in teams



Communication is crucial between all members within teams. Teams that communicate well complete tasks more efficiently and are more accurate in their work than others. They understand their roles and the roles of others as well as what is needed to be accomplished by the team (Bass, 2018). Effective communication also reduces the chances of conflicts and fights among team members and enhances team cohesion (Libert, 2018). Effective communication is a great source of motivation and satisfaction, since team members feel important and confident that other people listen to their

opinions.

Some tips for effective communication within teams are listed below (Kashyap, 2017; Le Cren, 2016; Libert, 2018; www.managementstudyguide.com):

- ✓ Use appropriate forms of communication
- ✓ Use appropriate rooms for meetings and discussions; participants should be allowed to speak freely
- ✓ Identify your own communication styles and those of your team members
- ✓ Built the team spirit with social events
- ✓ Clarify roles and responsibilities
- ✓ Encourage an open plan environment; physically open your door office
- ✓ Give detailed and constructive feedback
- ✓ Use time wisely and provide opportunities for informal meetings and discussions

The five B's of effective team communication

Be Clear

Be Present

Be Courteous

Be Flexible

Be Kind

<https://www.teamworkandleadership.com/2012/02/five-important-tips-for-effective-team-communication-1.html>



Learn more about effective communication within teams in the following links

[7 secrets for effective team communication](#)

[Effective communication and team work](#)

[Role of communication in team](#)

[How to improve team communication: The ultimate guide](#)

[8 simple and effective ways to improve team communication](#)

7 Essential tips for effective team communication

And watch the following videos

Effective Communication and Team Work

7 Secrets for Effective Team Communication - Project Management Training





Answer the following questions

1.The development of teams follows some stages as:

- a. Forming, Storming, Norming, Producing, Adjourning
- b. Forming, Storming, Norming, Performing, Adjourning
- c. Forming, Storming, Negotiating, Performing, Adjourning

2. Enabling conditions for effective teamwork are related mostly to organizational settings

- a.True
- b.False

3.Teamwork quality depends on (choose what applies):

- a.Communication
- b.Cohesion
- c.Balance of members contributions
- d.Mutual support
- e.Physical environment
- f.Coordination

4.Goal setting should done only by the team leader

- a.True
- b.False

5.Team leader should follow different leadership strategies according to the stage of team formation

- a. True
- b. False

6 Module: Goal Setting (TS-EM4)

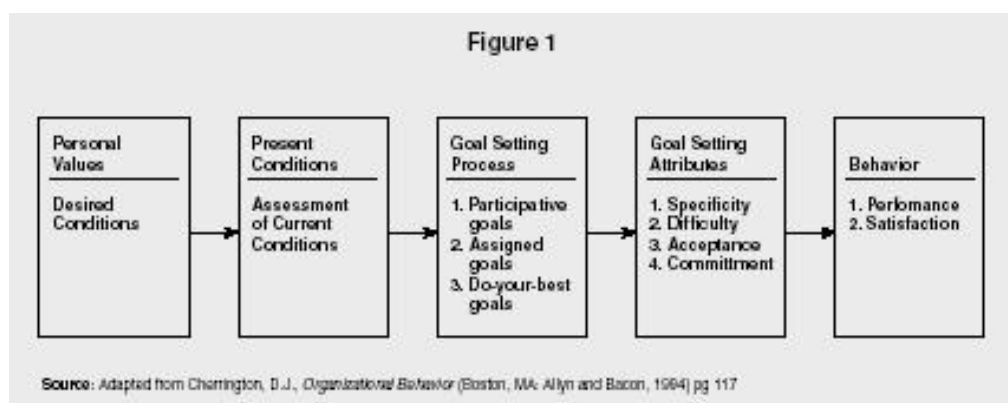
Goals are the first step when we are making plans for the future, and play a fundamental role in our choices and in the development of skills in several facets of our life from work to relationships. Understanding the importance of goals and the ways of setting achievable goals forms the pathway for success. Pablo Picasso said once that *"Our goals can only be reached through a vehicle of a plan, in which we must fervently believe, and upon which we must vigorously act. There is no other route to success."*⁴ In this module you will learn more about goal setting and how you can set your own professional goals following the principles of goal setting and using relevant tools and techniques.



The meaning of goal setting

According to Latham & Locke (2002 in Houston, 2019) a **goal** is defined as the object or aim of an action, usually within a specified time limit. It is the future state that an organization or an individual strive to achieve. People have to decide what is beneficial to them according to their values and needs, and set goals in order to achieve it (Houston, 2019). Thus **goal setting** is the process of achieving these goals. It refers to the development of an action plan designed to motivate and guide a person or a group toward a goal. Individuals may differ in their goal orientations priorities, while individual goal orientation may influence goal effectiveness (Marler, nd.).

The elements of goal setting are shown in the following figure.



Source: <https://www.referenceforbusiness.com/management/Ex-Gov/Goals-and-Goal->

⁴ <https://positivepsychology.com/goal-setting/>

Setting.html

Read more about goals and goal setting in the following link:

Goals and goal setting



Do you set goals in your personal or professional life?
If so, when was the last time that you went through goal setting?



Learn more about goals at work

15 Personal Goals for Work to Make You Stand Out from Your Coworkers



The benefits of goal setting

Goal setting is important in both personal and professional life. Setting goals at work contributes both to personal and organizational development. In particular the benefits of goal setting are that it (Clark, nd.; Houston, 2019; Guinness, 2018):

- ✓ Affects the intensity of people actions and emotions
- ✓ Increases task-relevance knowledge
- ✓ Enhances self-efficacy and self-confidence
- ✓ Improves well-being and positive thinking
- ✓ Promotes the development of internal locus on control
- ✓ Gives direction and help in decision making, facilitates difficult decisions
- ✓ Directs action and effort towards targeted activities, away from unrelated activities
- ✓ Affects persistence
- ✓ Improves accountability
- ✓ Supports prioritization
- ✓ Increases efficiency and performance
- ✓ Shows the way to progress tracking
- ✓ Encourages employees to search for new strategies to aid success
- ✓ Increases employees' motivation and organizational commitment

- ✓ Energizes employees
- ✓ Makes work environment more communicative, motivating and effective
- ✓ Helps employees to look forward for new accomplishments
- ✓ Helps employees to focus on where they need improvements and what steps to take in order to get there



Overcoming obstacles in goal setting

Five principles have been suggested for overcoming obstacles and leading to successful goal setting such as (Houston, 2019):

Commitment: a person should be attached to the goal and be determined to reach it.

Clarity: when a goal is vague it has limited motivational value; when a goal is clear a person knows what is required and is further motivated.

Challenging: challenging but attainable goals improve performance through motivation and self-satisfaction.

Task complexity: complex goals may negatively impact morale, productivity and motivation; the timescale should be realistic.

Feedback: makes goal setting more effective; helps the determination of the degree to which the goals are met and reflection on new goal setting.

Furthermore, some suggestions for successful goal setting are:

- ✓ Capabilities⁵ and resources should not be ignored or underestimated
- ✓ Goals should appeal to needs and values; in the case of business goals participation of employees in goal setting should be encouraged
- ✓ Look deeper in your professional role and include people from your work environment
- ✓ Include your boss in the process⁶ asking certain questions such as:
Are the numbers realistic? Will I have access to the necessary support and resources? Are my boss's goals aligned with mine, might he help?
- ✓ Self-regulation⁷ is also important in goal setting and achievement at

⁵ <https://blog.impraise.com/360-feedback/smart-goals-in-the-workplace-what-how-and-why-performance-review>

⁶ <https://www.ivyexec.com/career-advice/2017/goal-setting-work-discuss-boss/>

work. Self-regulation can provide employees with an opportunity to set specific high goals, to monitor ways the environment may hinder goal attainment, and to identify and administer rewards.



Learn more

Barriers to goal setting

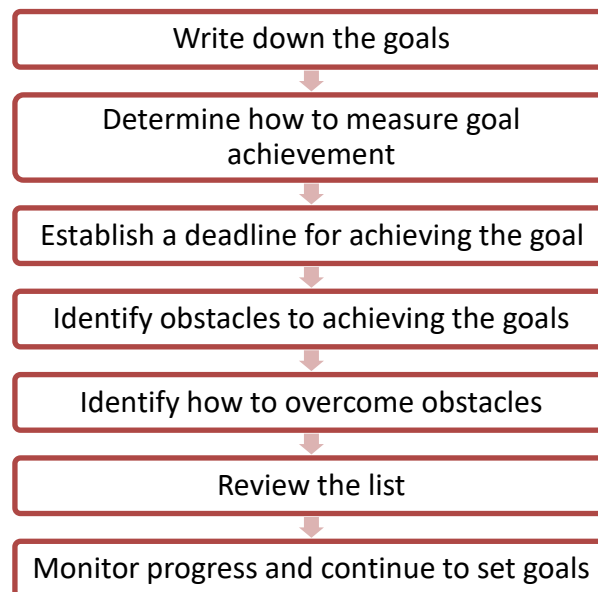


How many people do you believe that they write down their goals in professional life? And of those, how many review them on regular basis?



Effective goal setting process

The steps of goal setting process are presented below:



Source:

https://www.dartmouth.edu/~hrs/profdev/performance_management/goal_setting_process.html

Read also the following article:

⁷ <https://www.referenceforbusiness.com/management/Ex-Gov/Goals-and-Goal-Setting.html>

The Goal Setting Process

For effective goal setting remember⁸ that:

- ✓ Goals should be **SMART**, specific, measurable, assignable, relevant, time specific
- ✓ Goals should be realistic and attainable without being too simplistic or easily achieved
- ✓ Setting smart goals for you and/or your team begins with feedback
- ✓ Goals must be accepted, be fair and consistent in order other people to make them their own
- ✓ Goals at work should be tied to the organization's mission and vision
- ✓ Frequent feedback allows the adjustment of level of effort to achieve goals and provides continued motivation
- ✓ Evaluation of goals should be pursued; due to changes the goals need to be flexible

Examples of SMART goals

S: add a new feature to the app

M: have it ready to deploy to the app store

A: development of team assigned responsibilities

R: improves current product and makes things more accessible for users

T: 2 months

S: begin new social media campaign

M: reach % downloads

A: marketing/PR team responsible for running campaign

R: promote our new feature

T: in the next two months

Source: <https://blog.impraise.com/360-feedback/smart-goals-in-the-workplace-what-how-and-why-performance-review>

⁸ <https://blog.impraise.com/360-feedback/smart-goals-in-the-workplace-what-how-and-why-performance-review>



Did you know how to make your smart goals smarter?

Here are some tips

Make your SMART Goals SMARTER



Learn more about the goal setting process in the following links

10 Steps for effective goal setting: Set and achieve goals

10 steps to successful goal setting

Steps To Setting Workplace Goals And Making Them Happen!

Goal setting

15 Killer Tips on How to Set Professional Goals (Examples Included)

How to Set (+Reach) Your Personal Goals in Life and Work



Now that you have learned more about goal setting try to develop smarter professional goals. Focus on one or two that are more important for you.



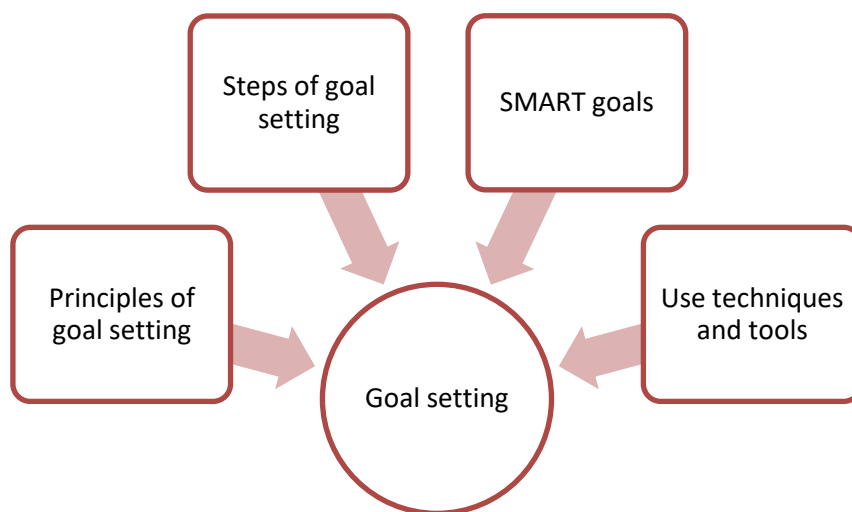
Goal setting tools

Some ideas of existing IT tools for goal setting are provided in the following links

Tools to Help You Set, Track and Achieve Your Goals

30 Goal Setting Tools That Will Help You Achieve Success

10 Best Tools For Setting And Tracking Goals



Follow the goal setting process described above in order to set your own professional goals using the following table

Goal	How to be measured	Deadline	Possible Obstacles	Ways to overcome obstacles



Answer the following questions

1. The five principles for successful goal setting are:
 - a. Commitment, clarity, challenge, task complexity, reliability
 - b. Commitment, clarity, challenge, task complexity, feedback
 - c. Commitment, clarity, challenge, feedback, reliability

2. An effective goal setting procedure always start with the determination of measurement of goals
 - a. True
 - b. False

3. SMART goals means that goals should be specific, measurable, assignable, realistic, and time specific
 - a. True
 - b. False

7 Module: Creative Thinking (TS-EM5)

Creativity in general is used to refer to the act of producing new ideas, actions or approaches. Within organization contexts it applies to the generation of novel ideas by individuals or groups that leads to innovation. Creativity is important in business since organizations need to adapt to the fast changing environment, to develop new products and improve customer services. In the past, it used to be said that creativity is talent. But new research has shown that creativity is also a skill that can be learned. Developing creativity in an organization requires a combination of elements both environmental and personal. In this module you will learn about the meaning of creativity and the characteristics of creative behavior; methods and techniques of creative thinking; the principles and methods of agile thinking in software industry as enablers of creativity and innovation; and the characteristics of a creative organizational environment.

Understanding creativity and creative behaviour



Creativity has a vast number of definitions depending on the context it is used.

Definitions of creativity have been established from the 1960s, when psychological research proposed the 3Ps approach of creativity which involves a) the novel products (objects, machines, ideas, problem solutions etc.), b) the process (fantasising, diverging from the customary, inventing) and c) personal properties (promote the production of novelty) (Cropley, 2011). In our modern time creativity is not just novelty; a “product” must offer some kind of genuine solution. This led to the definition of creativity as the production of relevant and effective novelty. Since revolutionary ideas might have negative consequences, creativity nowadays has also an ethical element (Cropley, 2001).

Theorists have proposed several types of creativity depending on its foundation (divergent or convergent thinking), primary (generation of new ideas through genuine breakthroughs) or secondary (new ideas are generated through working with previous breakthroughs made by others) (Sjolund, 2018).

Is creativity a skill or a talent?

All people are naturally creative in different fields, but in some people creativity is more pronounced. However creativity can be increased with

appropriate training and practice. All people can learn appropriate techniques and how to use tools that enhance creativity. Furthermore, the appropriate environment that fosters creativity can be built in business contexts (Smith, 2012).

Can creativity occur by chance?

There are many examples of lucky combinations that led to acknowledged creative solutions, but the role of systematic hard work in creativity is essential. Replacing in Edison's saying "genius" with "creativity" we could say "Creativity is 1% inspiration and 99% perspiration" (Cropley, 2001).

Does creativity require specialized knowledge?

The importance of knowledge related to the field of potential novelty is widely accepted. However there are researchers that indicate that knowledge base can be manipulated to yield effective novelty and narrows thinking (Cropley, 2001).

Should a person have specific characteristics in order to be creative?

Openness to change, flexibility, and the courage to try new things are associated with creativity (Cropley, 2001).

To be creative is not a psychological destination or a permanent state of affairs, it is a **behavioural process**. Creativity involves creative problem solving related to situations where some element is missing. It is not something that has been offered to us, it requires hard work and many different internal qualities and external circumstances.



Learn more about creativity and creative behaviour in the following links:

[A step by step guide to creative behaviour](#)

[The 7 essential behaviours of highly creative people](#)

[Who says creativity can't be learned?](#)

[What is Creativity? \(And why is it a crucial factor for business success?\)](#)

[4 types of creativity](#)

There are 4 types of creativity



Creativity in ICT

Read the following article

[Creativity in information technology](#)



Methods and techniques of creative thinking

The use of creative thinking is particularly important for the introduction and application of an idea. It triggers novelty and effective solutions to problems, while it stimulates curiosity and innovation.

Creativity is the result of consistent learning and application as well as desire for consideration of a given situation from several points of view.

There is a variety of methods and techniques that could activate creative thinking for different parts of the creative process. There are techniques for defining a problem, exploring attributes of a problem, generating alternatives, making visual explorations-metaphors-analogies, evaluating and implementing ideas. The most popular are:

- ✓ The SCAMPER technique
- ✓ Six thinking hats
- ✓ Brainstorming
- ✓ Mindmapping
- ✓ Checklist
- ✓ Lateral thinking
- ✓ Picture association
- ✓ Change perspective
- ✓ Get up and go out
- ✓ Reframing
- ✓ Business process re-engineering:20 questions
- ✓ A bridge-process flow analogy
- ✓ Metaphorical thinking
- ✓ Negative brainstorming

Find more information about the implementation of these techniques in the following links:

[Techniques for creative thinking](#)

[The four most powerful types of creative thinking](#)

[8 creative thinking techniques and tools to use](#)

[Creative thinking techniques](#)

[Negative brainstorming: using negative ideas to generate change](#)

[A guide to the SCAMPER technique for creative thinking](#)

[The six hats of critical thinking and how to use them](#)



Try to think how you could use the SCAMPER technique to help one of your clients to develop new services based on ICT. Try to develop a list of questions that you could use.



Read the following article

[The positive psychology of creativity \(+ 3 exercises to try\)](#)

Try to implement the following action plan for one month in order to enhance your creative mindfulness

- Accept mistakes
- Keep daily notes and write down three good things every day
- Take some minutes each day to meditate

After the period of this month, consider again your creativity. Have you seen any change?



Boost Your Creativity



Source: <https://medium.com/swlh/9-ways-to-dramatically-improve-your-creativity-df9b36b7967a>



Learn more about ways to boost your creativity

[10 ways to boost your creativity](#)

[17 ways to develop your creativity](#)

[10 Steps for boosting creativity](#)

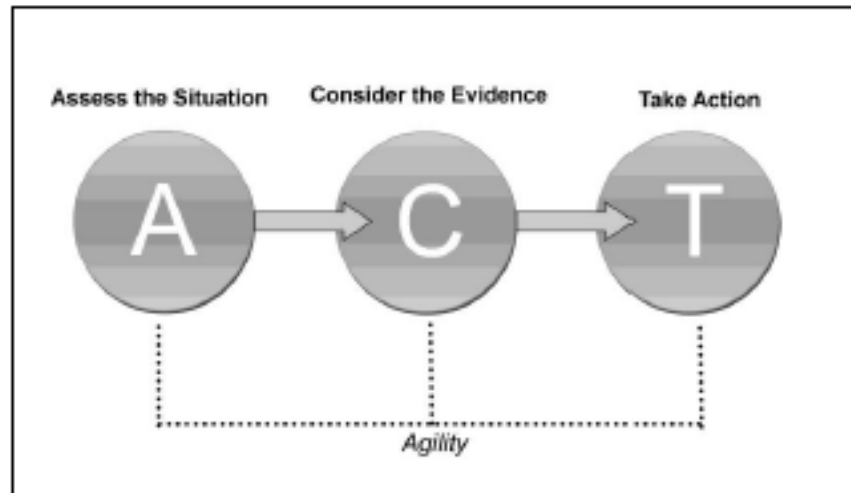
[Boosting creativity – 10 easy steps](#)



Agile thinking

Agile thinking is a framework for applying critical thinking to decisions made in organizations, where factors other than logic play a big part in the decisions that are made (Kreitzberg, 2013).

The agile thinking framework includes the following stages:



Source:

<http://www.agilethinking.com/Portals/0/Docs/Kreitzberg.PMI%20Congress%202013.Agile%20Critical%20Thinking.pdf>

Assessing the situation incorporates tools that help the deeply and accurate understanding of the context, stakeholders, risk, corporate culture or other relevant aspects.

Considering the evidence helps the recognition of assumptions and incorporates multiple perspectives: gathering and evaluating information, accounting of bias and risk, checking for logic, drawing conclusions, considering alternatives, making sense and looking for unintended consequences.

Taking action incorporates tools that help ensuring that feedback loops work, evaluate metrics, consider when corrections might be warranted and how they should be made.



Learn more about agile thinking in the following links

[Agile thinking. Becoming the best product development and management organization in your market](#)

Agile Critical Thinking: How to Cope with Change, Complexity and the Unexpected

Agile is not a method – It is a way of thinking

Chapter 1. What is agile? Principles and practices

What does it mean to have an agile mindset?

What is agile? The four essential elements

And watch the following video

Creative Thinking in Agile Requirements Processes



Choose a problem that you have to solve at your work and try to use agile thinking applying the following steps:

- a. Assess the situation. Answer the following questions
 - What is exactly the problem that I am trying to solve?
 - What are my priorities?
 - What are my resources and time frame?
 - What organizational and political issues will I face?
- b. Consider the evidence. Begin thinking critically about your options. Focus on the reasons, emotions, and decisions.
- c. Take action. Observe and measure what works and what doesn't. Consider if necessary mid-course corrections so that actions are focused, effective and efficient.



Agile methods in software industry

Agile thinking methods have been first created and widely used in the field of software development, since they are responding to the ever-changing nature of software and technological industries (Sjolund, 2018).

Visit the following link to find out the principles of agile thinking in software industries:

Agile principles in Action

There is a number of agile methods that are used by organizations in

software industry worldwide. Some of them are:

- ✓ Adaptive Software development ASD
- ✓ Crystal
- ✓ Dynamic Systems Development Method DSDM
- ✓ Extreme Programming XP
- ✓ Feature – Driven Development FDD
- ✓ Scrum

Each methodology offers a different amount of rules and practices and is are mostly multidisciplinary rather than interdisciplinary.

Agile methods are rather adaptive than predictive and people-oriented than process-oriented (Fowler, 2005). They are able to adapt to changes that emerge requirements and misconceptions, this fact is promising some creative work.

According to some research, agile practices can contribute to enhancing innovation and creativity since they are practicing a “learn by doing” approach when exploring problems (Hannola et al., 2013).

Follow the links listed below for more information about these methods:

[Agile & Development: Adaptive Software Development \(ASD\)](#)

[Agile & Development: Crystal](#)

[Agile & Development: Dynamic Systems Development Method DSDM](#)

[Extreme Programming](#)

[Feature Driven Development \(FDD\) and Agile Modelling](#)

[Scrum methodology](#)



The 12 Basic principles of agile project management in software development

- ✓ Attain customer satisfaction through continuous delivery of software
- ✓ Don't be afraid to make changes
- ✓ Deliver working software, with a preference to the shorter timescale
- ✓ Developers and management must work together

- ✓ Build projects around motivated individuals
- ✓ Face-to-face interactions are the most efficient and effective modes of communication
- ✓ Working software is the primary measure of progress
- ✓ Agile processes promote sustainable development
- ✓ Continuous attention to technical excellence and good design enhances agility
- ✓ Simplicity is essential
- ✓ The best architectures, requirements, and designs emerge from self-organizing teams
- ✓ Inspect and adapt

Source: <https://blog.hubspot.com/agency/basic-principles-agile-project-management>



Characteristics of a creative environment

The most prominent traits of creative organizations are communication channels, systems for suggestions, brainstorming sessions, groups with idea generation as the only responsibility, encouraged contact with outside sources, heterogeneous personnel policy, assignment of non-specialists to problems (Sjolund, 2018).

Many researchers have also described several aspects of organizations that can facilitate creativity such as (Alencar & Bruno-Faria 1997; Cropley, 2011):

- ✓ Support from colleagues; dialogue and reliance among the work group; interpersonal relationships which favour and stimulate new ideas
- ✓ Cognitive reorganization: changes in thinking strategies, in the organization of knowledge, and in the ways of evaluating work activities
- ✓ Challenging tasks or missions that require the expression of the creative potential
- ✓ Freedom and autonomy: freedom to decide how to perform tasks; autonomy to make decisions when necessary
- ✓ Organizational structure: limited levels of hierarchies; flexible norms; power decentralization

- ✓ Organisation support: recognition of and support to creative work; availability of mechanisms to develop new ideas
- ✓ Physical environment: with adequate light, furniture, space and ventilation
- ✓ Salaries and benefits: adequate remuneration, benefits and reward policies
- ✓ Facilitative leadership styles and support from the boss: openness, flexibility, and respect to divergent opinions; encouragement of new ideas
- ✓ Technological and material resources which facilitate the process of new idea production
- ✓ Acquisition of new skills: training of all staff aiming at the development of the creative potential and the facilitation of the innovation process



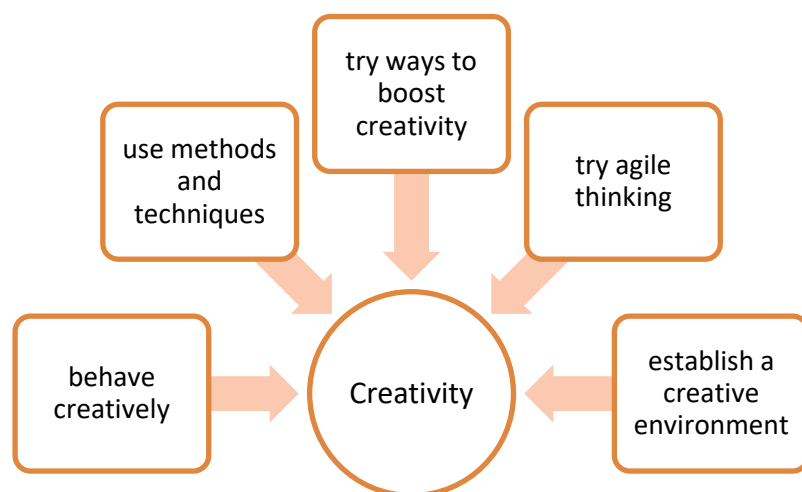
Learn more about the characteristics of creative environment in the following links:

[Characteristics of creative organizations](#)

[10 characteristics of highly creative environments](#)

[Characteristics of a creative environment](#)

[Creative work environment](#)





Answer the following questions

1. Creativity cannot be learned; it is a natural talent

- a. True
- b. False

2. Which of the following are techniques of creative thinking (Choose what applies)

- a. Mind mapping
- b. Project management
- c. Problem solving
- d. Brainstorming
- e. Storytelling

3. The agile thinking framework is oriented more on the work process

- a. True
- b. False

8 Answers to assessment activities

Module: Effective communication and presentation (TS-EM1)

Self assessment

1: b,d,e

2: a,c,e

3: a

4: d

Module: Change management (TS-EU2)

1:b

2:b

3:b

Module: Team Working (TS-EM3)

1:b

2:b

3:a,b,c,d,f

4:b

5:a

Module: Goal Setting (TS-EM4)

1: b

2: b

3: b

Module: Creative Thinking (TS-EM5)

1: b

2: a,d

3: b

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