

# Edu Trends

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# Mentoring

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# Table of contents

<b>4</b>	<b>Introduction</b>
<b>5</b>	<b>Mentoring over the ages</b>
<b>10</b>	<b>Definition: what is mentoring?</b>
<b>12</b>	<b>Types of mentoring</b>
<b>13</b>	<b>Role of the teacher: the mentor</b>
<b>16</b>	<b>Evaluation</b>
<b>17</b>	<b>Benefits</b>
<b>18</b>	<b>Relevance for Tecnológico de Monterrey</b>
<b>19</b>	<b>Relevant cases at Tecnológico de Monterrey</b>
<b>21</b>	<b>Relevant cases at other institutions</b>
<b>25</b>	<b>New trends</b>
<b>26</b>	<b>A critical look</b>
<b>27</b>	<b>Challenges</b>
<b>28</b>	<b>Recommended actions for teachers</b>
<b>29</b>	<b>Recommended actions for academic leaders</b>
<b>30</b>	<b>Credits and Acknowledgements</b>
<b>30</b>	<b>References</b>

# Mentoring

Mentoring is an educational relationship between a mentor and a mentee whom the mentor teaches, listens to, shares with, accompanies, supports, and guides on his or her learning pathway.



# Introduction

**Mentoring is a flexible relationship that can be understood and developed in many ways, in both business organizations and educational systems, where it is gaining prestige year after year. In the United States, for example, the boom in mentoring programs over the past few years has been so notable that, in 2016, January was officially declared "mentoring month" in that country. In fact, mentoring has been called on to play an increasingly important role within the ecosystem of the media and practices with which we learn in today's knowledge society.**

This Edu Trends offers an overview of mentoring as an educational trend, particularly in the field of higher education and entrepreneurship, including the following content:

- A tour of the evolution of mentoring in 10 key moments of history, from classical antiquity to the Digital Era.
- A proposal for the definition of mentoring in contrast to other terms with which it is often easily confused in academic settings: tutoring, coaching, advising and counselling.
- A description of the characteristics, functions and strategies that comprise the work and role of the educator as a mentor.
- A range of procedures to evaluate the quality of a mentoring process.
- Relevant mentoring cases in a Mexican university: Tec de Monterrey.
- International mentoring cases: national educational programs, citizenship initiatives, university mentoring programs and diverse online mentoring phenomena.
- A balanced look at the benefits and the challenges involved in implementing mentoring in the field of education.
- A predictive diagnosis of where the trend is going in the business world and in formal education.

## Who is mentoring's target audience or who is interested in it?

- Educators and academic leaders of the Tecnológico de Monterrey community who are interested in being mentors for a project or in developing mentoring programs (related to Week i/Semester i).
- Professors from anywhere and any institution in the world who are curious about incorporating mentoring into the educational work.
- Mentors from professional fields other than education.
- Educational entrepreneurs who would like to explore in person or online the benefits and potential of mentoring as an educational service.
- Companies and personnel related to knowledge management and in-company training development.
- Young people (and adults) who are students and are interested in exploring the benefits of finding good mentors.
- Individuals, in general, who are interested in new (and old!) educational trends and, particularly, in relationship models between someone who is learning and someone who is teaching.

# Historical introduction: Mentoring across the ages



**1** Etymology (Mythology)  
Date: Before 600 BCE



**2** Plato and Aristotle  
Date: 4th century CE



**3** Medieval Monks  
Date: 9th - 13th centuries The Middle Ages



**4** Master-Apprentice  
in the Renaissance  
Date: 14th - 16th centuries Renaissance



5

### Host-Guest (Societies) in the Enlightenment

Date: 17th – 18th centuries, Enlightenment



6

### Employees and Workers

Date: 18th – 20th centuries, Modern Era



8

### Mentoring in education

Date: 1990s



7

### Mentor-Employee

Date: 1970s, USA



9

### Mentoring in the Digital Era

Date: Beginning of the 21st century



10

### Mentoring as an emerging educational trend

Date: Last five years

# Historical introduction: Mentoring across the ages (description)



## 1 Etymology (Mythology)

Date: Before 600 BCE

**Description:** The word “mentor” originates from the figure Mentor, in Greek mythology. Mentor to whom Ulysses, King of Ithaca, entrusted the education of his son Telemachus. Ulysses would be absent from his kingdom, Ithaca, for many years to participate in the Trojan War. Before setting out to the war, Ulysses asks Mentor to prepare his son to be the future king. The story tells that Mentor was the personification of Athena, the goddess of wisdom.

**Lesson:** Mentoring implies preparing someone for a profession, for a role.



## 2 Plato and Aristotle

Date: 4th century CE

**Description:** Plato was Aristotle’s mentor. Apparently, using the maieutic or Socratic method, he formed and fostered the philosophical genius of Aristotle, who matured so far in his own knowledge that he built his own philosophical system, that contrasted in many ways to that of his mentor.

**Lesson:** The purpose of mentoring is not to indoctrinate but to emancipate, which implies contributing to the development of another person to enhance his or her learning in a self-directed manner.



## 3 Medieval Monks

Date: 9th - 13th centuries The Middle Ages

**Description:** One of the most common mentoring phenomena in the Middle Ages was the instructional relationship that existed between an older monk (senex) and a novice (junior). The veteran monk instructed the young man in the rules of religious life and offices and, at the same time, promoted him within the religious order.

**Lesson:** Mentoring includes the non-technical dimensions of an individual’s development and fosters a comprehensive development, as a person.



## 4 Master-Apprentice in the Renaissance

Date: 14th – 16th centuries Renaissance

**Description:** In the Middle Ages and the Renaissance, a master craftsman (carpenter, artisan or architect, etc.) accepted apprentices in his workshop so that by imitating the master’s technique, indications and corrections, would develop successfully in the same trade.

**Lesson:** Mentors transfer their practical knowhow and guide the apprentice’s induction into a professional community.



## 5 Host-Guest (Societies) in the Enlightenment

Date: 17th – 18th centuries, Enlightenment

**Description:** The intellectual elite of the Enlightenment would meet to relax in **salons** (France) or **clubs** (England). In these elegant salons or clubs, hosts would act as patrons of some of the guests, and, in turn, some of the illustrious guests informally shared their knowledge.

**Lesson:** The importance of the mentor as a node of significant social networks, as a propitiator of encounters.





6

## Employees and Workers

Date: 18th – 20th centuries, Modern Era

**Description:** With the Industrial Revolution, work was standardized, atomized and specialized. The industrial development of cities and their evolution toward consumer societies required specialized labor. The figure of the mentor was no longer a social protagonist and became a coach, in enterprise, or a teacher, in a national institutionalized education system.

**Lesson:** Mentoring implies a broader, more open relationship than mere professional training.



7

## Mentor-employee

Date: 1970s, USA

**Description:** With globalization and the evolutionary process toward a society of knowledge, a boom of mentoring programs in companies commenced, encouraging more experienced employees to transfer their expertise to new personnel.

**Lesson:** Mentoring assumes the circulation of knowledge from those who know more to those who need to learn it.



8

## Mentoring in education

Date: 1990s

**Description:** Boom in national mentoring programs for trainee teachers and of peer-to-peer mentoring systems to improve academic integration or success, among other mentoring models in the sphere of educational institutions.

**Lesson:** Mentoring can be integrated within an institutional educational field.



9

## Mentoring in the Digital Era

Date: Beginning of the 21st century

**Description:** Internet became an interface that offered and determined new mentoring processes. Users could access specific mentors on the Internet, subscribe to the information provided by the experts or participate in online professional social networks, among other initiatives.

**Lesson:** Mentoring can be distributed and developed online.



10

## Mentoring as an emerging educational trend

Date: Last five years

**Description:** Over the last five years, mentoring has gained space in educational settings as one of the protagonists of a profound revolution in teaching and learning methods. For example, graduate programs based on a mentoring system emerged to lead students to the fulfillment of their own professional project. An increasing number of universities turn to mentoring for achieving educator digital literacy. The possibilities of online mentoring with platforms and teachers who share their knowledge through content on blogs or in video format (YouTube) have also been multiplied.

**Lesson:** Mentoring is in fashion and is evolving according to the transformation of educational and communication settings.

# Definition: What is mentoring?

## Polysemous term

Its meaning is elusive, as can be seen in this piece of information: in the literature reviewed by Crisp and Cruz (2009) there are more than 500 definitions that allude to mentoring initiative or phenomena.

## Definition

The concept of mentoring consists of an educational relationship of accompaniment and guidance developed between an individual with more experience (mentor) and another individual who wishes to acquire this experience (mentee). Mentors don't just share technical knowledge, but also listen, inspire, challenge and support the trainee or student on their learning journey.

## Comparative definition

Nevertheless, the term mentoring, particularly in academic spheres, lives side by side with others, such as tutoring, counseling and coaching, which are used interchangeably to refer to educational support processes offered in addition to those offered regularly in the classroom. Comparing it to and distinguishing it from these other terms is valuable for understanding mentoring within an educational context.

Criterion	Mentoring	Tutoring	Coaching	Advising	Counseling
Example of a professional in the field of education	Mentor of a civil laboratory project	Graduate thesis tutor	A coach for achieving educator digital literacy	Math advisor in a university department	Academic/administrative graduate student counsellor
Fundamental action	Dialogue and assistance	Teaching	Training and motivation	Problem solving	Orientation
Fundamental purpose	Personal and professional growth of the learner	Directing and providing feedback on student learning	Achieve a transformation in the actions or performance of the individual or organization	Solving/correcting concrete learning problems	Orientate the student's curricular decision-making
The relationship focuses on personal and social development	Yes	Yes/No	Yes/No	No	No
Usually, how protocolized and hierarchical is the relationship between the expert and the apprentice?	Somewhat	Very	Somewhat	Very	Very
Typical duration of the relationship	Long term	Medium/long term	Medium term	Short term	Long term

**Table 1.** Comparative analysis between mentoring and related terms in academic settings (tutoring, coaching, advising and counselling).

**Source:** Observatory of Educational Innovation



Consolidating a virtuous triangle by means of a strategic alliance between the student, his/her family and the school, activated through a strategic, comprehensive tutoring system, is essential for teaching and developing lifelong educational competencies in favor of young people in the 21st century.

Consolidating a strategic, comprehensive tutoring system demands the professionalization of tutors with a solid profile, such as counselors, advisors and motivators. The system strategically designs and articulates academic and cocurricular initiatives so that students will reflect on, value and provide evidence of their experiences, adopting this practice for the rest of their lives.

Faculty tutors represent a direct strategic link between the student, his/her family and the school. They also provide students with the scenarios and experiences to support their academic and personal development, fomenting educational competencies, such as: self-knowledge, communication, collaboration, critical thinking, creativity, and personal and social responsibility.

**Paulino Bernot Silis**

High School Dean,  
Tecnológico de Monterrey

# Side-by-side Cloud Comparison

MENTORING	CRITERION	TUTORING
<b>+ freedom</b> Mentor and mentee decide when and where to meet, how many times, for what	<b>Institutional control</b>	<b>+ control</b> Tutor and learner have the flexibility to regulate their relationship within the institutional regulations and settings
<b>+ horizontal</b> The mentor is someone with greater expertise who communicates his/her knowledge by example (tacit knowledge)	<b>Transmission of knowledge</b>	<b>+ vertical</b> The tutor is an expert who communicates his/her knowledge through teaching (explicit knowledge)
MENTORING		COACHING
<b>+ close and horizontal</b> Implies personal accompaniment on the learning journey	<b>Nature of the relationship</b>	<b>+ technical and vertical:</b> Implies coaching and direction of the learning process oriented toward a specific objective
<b>Exploratory</b> Mentor and mentee mutually discover the value, meaning and scope of the relationship	<b>Management of the relationship</b>	<b>Directive:</b> The coach determines the learner's evolution process focusing on his or her needs
MENTORING		ADVISING
<b>Development of a connection:</b> Implies a lasting relationship of mutual appreciation	<b>Type of relationship</b>	<b>Production/consumption of a service:</b> Implies the timely resolution of a learning problem
<b>Undefined:</b> Mentoring can focus on problem solving, emotional support, assignment of educational tasks, etc	<b>Scope of the relationship</b>	<b>Defined:</b> The advisor focuses on the technical training of the advisee or the resolution of a concrete doubt
MENTORING		COUNSELING
<b>+ broad:</b> Professional and personal growth of the mentee	<b>Main purpose</b>	<b>+ specific:</b> Offer orientation, useful information on the academic or professional development process. Facilitate curricular decision-making
<b>+ flexible relationship:</b> Mentor and mentee agree on the scope, spaces and times of their relationship	<b>Institutionality</b>	<b>Relationship + institutional:</b> The activity is regulated by the educational institution

Source: Observatory of Educational Innovation

# Types of mentoring

In reality, the term mentoring can be used to refer to a very diverse set of educational practices, including opposing features (Kahle-Piasecki and Doles, 2015). Nevertheless, they all coincide in their essence: they are learning experiences around a relationship formed between someone who knows (mentor) and someone who doesn't know (mentee).

Some of the types and modalities of mentoring are presented below:

## Mentoring formal vs. informal

Formal mentoring follows a highly structured program with established objectives, a mentor-mentee relationship pre-established and regulated by the institution, and an evaluation or validation policy for the service. In contrast, informal mentoring does not have a predefined model, but the mentor and mentee choose one another and also choose the rules, nature and duration of their relationship.

**Example:** A university mentoring program designed to help incoming students adapt to life in their degree program is an example of formal mentoring. Informal mentoring occurs, for example, when in the same context, a teacher and a student, without responding to any institutional request, create a relationship in which the teacher helps the student on his or her growth path as a student and a person.

## Peer-to-peer mentoring

When the mentoring relationship occurs between individuals of the same age, role or status in such a way that each of them acts as a mentor of the other in whatever each of them can contribute, be it experience or skills. It implies, therefore, a horizontal relationship, between colleagues, contemporaries or individuals who mutually view each other as equals. Within this peer-to-peer relationship, mentoring can be more reciprocal or, in contrast, with more established roles (mentor-mentee).

**Example:** In an online social network for educators, each participant can learn from others and share with others what he or she knows.

## Group mentoring

Group mentoring occurs when the mentor supports a group of people in a project or common interest. Individual mentoring relationships are not formed, but, instead, actions focus on the benefit of the group, its objective or shared purpose. This relationship can be structured using diverse models, such as the creation of flexible circles around the figure of the mentor or the generation of projects that target a specific achievement. Digital technology makes it possible to develop this type of mentoring through platforms that facilitate discussion forums, banks of shared resources or videoconferences with the mentor.

**Example:** In an entrepreneur training program in which each team prototypes a business project and the mentor joins in and guides the development of the project in group sessions.

## Reverse mentoring

Relationship in which mentoring is reciprocal, so that the mentor learns from the mentee a different way of seeing or doing things, a generational perspective or certain technological practices. The difference between peer-to-peer mentoring and reversible mentoring is that the latter occurs between individuals with different statuses and roles within a community, between mentors and mentees, veterans and novices. Nevertheless, the learning dynamic is equally flexible and reciprocal in both cases.

**Example:** Senior employees learning from junior employees about the use of digital technology in their field of work.

## Cross mentoring

Initially, it consists of a program of broad, flexible, lasting exchanges between mentors and mentees from companies or educational institutions that do not belong to a same group and are unrelated, so that each of the organizations contributes mentors and mentees to the others. Participants can discover different professional practices, absorb different mentalities, recognize areas of opportunity, forge alliances or any other valuable exchange.

**Example:** a cross-mentoring program between three faculties - science, economics and humanities - that wish to exchange knowledge in relation to sustainable development.

## Fast-track mentoring

Consists of rapid, timely meetings, in which highly prestigious and experienced people participate, chatting in an informal setting with those who approach them to ask for advice or support. Although, strictly speaking, a follow-up relationship is not created, the other principles of mentoring are exercised, such as the transmission of knowledge from experience, the articulation of learning through dialogue or the flexibility in the expert-apprentice relationship.

**Example:** Business congresses in which leading businesspeople participate in a conversational dynamic with young entrepreneurs.

# Role of the teacher: the mentor

## Profile of the mentor

A good mentor must be so in his or her context, which implies that each mentoring case requires a specific mentor profile and a different type of mentor-mentee relationship. Nevertheless, there are mentor constants or attributes that can be observed in most successful mentoring practices (Vélaz de Medrano, 2009). These qualities, as a whole, comprise the basic profile of a mentor:

### Basic profile of a mentor



**SOURCE:**  
Observatory  
of Educational  
Innovation

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# Roles of a mentor

The work of a mentor involves the integration of a set of educational roles (Manzano and cols., 2012). The mentor is the guru, but also a companion. Mentors are several things at the same time. The following is a list of the fundamental roles performed by the mentor in relation to mentoring, defined by the key action implemented by the mentor in each role.



## Accompany

The mentor carries out the task of accompanying the mentee throughout the learning process, being available to listen and advise, having a perspective of the mentee's evolution, and making him or her feel accompanied and supported.



## Be a role model

The mentor as a model of conduct, mentality, empathy or any other quality appreciated by the mentee. Mentors should teach by setting an example, practicing the values and skills they preach, thus modeling the way of being and acting in that profession. The mentee learns by observing that example, imitating and being inspired by it.



## Provide guidance

The mentor can explain the path routes, inform and explain, argue in favor of a certain way of doing or conceiving things, thus guiding the mentee's decision-making.



## Offer assistance and support

Support with information, a piece of advice, an idea or concrete strategic to solve a problem, with material support, a loaned tool, useful listening, a contact. Assistance focuses on the mentee's needs and not on the abundance of the mentor's resources.



## Motivate

Communicate to mentees the purpose, value and meaning of the achievement that could encourage their learning action. Also, show them to motivate themselves, to trigger their own aspirational resources.



## Sponsor

Foster the mentees' career, facilitating their access to people or valuable training opportunities, sharing his/her list of contacts or recommendations, so mentees can develop their own academic or professional career path.



## Challenge

Involve mentees in activities that challenge their capacities and allow them to progress qualitatively along their learning path. The ideal conditions of a challenge consist of the challenge being sufficiently difficult to imply an escalation in learning and sufficiently feasible so as not to discourage the person facing it for the first time. It is important for mentors to have overcome these challenges beforehand and, therefore, have the moral authority and experience to guide the mentee's efforts.

# Teaching strategies for mentoring

The following are the teaching strategies commonly used by mentors to carry out their work. They are not exactly teaching techniques, since they do not operate in a teaching framework oriented toward specific learning content. Nevertheless, they do constitute the foundation of the basis pedagogy of mentoring.

## Modeling

Consists of teaching by example, when the mentor does what the learner wants to learn. This action can be a didactic simulation created specifically to model the behavior of the learner or the mentor can invite the mentee to observe how he/she performs in a real academic or professional context.

## Autobiographical narration

When mentors tell their own anecdotes or cases that they personally know so that the mentee learns how to deal with concrete problematic situations. They can be success stories or, very often, failures. These stories usually illustrate some sort of lesson or action principle applied to real situations.

## Active listening

Mentors can be very helpful simply by listening to doubts, emotions or situations shared by the learner. They don't necessarily have to offer advice. Very often, the quality of active listening and empathy can create a communicative environment in which the mentee becomes aware of his or her situation, lets of steam, recovers self-esteem, and feels understood and supported.

## Maieutics

Following the Socratic method, mentors dialogue with their mentees asking questions, seeking to make the mentees question their own initial prejudices and generate their own learning in the direction the expert leads them.

## Feedback to the participant

Mentors carefully observe the learners' performance in a concrete activity and indicates what they could improve or validates what they are doing right. Unlike the evaluation rubric normally used by a teacher, mentors assess their mentees' performance in the same learning process, but doesn't use a sequential line of previously established tests (exams, assignments, etc.)

## Patronage

Mentors place at the disposal of the mentees their personal contacts or resources to provide them with opportunities in which they can progress professionally or enhance their learning. Some examples of patronage would be connecting mentees to a project in which they can develop their capacities, introduce them to people who are important for their evolution, provide them with work tools or spaces, or share educational materials.

## PLE Transfer

Personal Learning Environments (PLE) comprise the set of sources, activities, applications, places or people who make up the network of resources through which a person learns. A highly valuable strategy for mentees is to have access to the mentor's own bank of learning resources. Therefore, one of the most valuable practices of mentors is to share, for example, books that have influenced them, the websites they visit, the scenarios where they learn the most, the digital applications they use, etc.

# Evaluation

The open, flexible nature of the mentor-mentee relationship implies a challenge when it comes to evaluating the quality of the mentoring. Moreover, there are multiple ways and modalities of mentoring and each one of them requires its own congruent evaluation strategy. The following are some of the evaluation procedures frequently used in mentoring.

## Questionnaires

Closing questionnaires are becoming increasingly more frequent in professional mentoring services. Questionnaires can include closed questions (Likert scales, etc.), that provide a comparative standard between each mentoring service, and open questions, which reveal the significance and value of the experience for participants. Even though it is usually administered at the end of the service or experience, it can also be used as a diagnostic tool at the beginning of the relationship or as an ongoing feedback procedure in the process.

## Teaching techniques

Some didactic instructional models and diverse pedagogical techniques can help mentors in their practice, while providing evaluation techniques at the same time. For example:

- a) **PBL (Problem-Based Learning)**, in which mentors, based on a problem put forward to their mentees, use their experience to solve it. The end product, constructed along the way, is the best proof of evaluation.
- b) **The case method.** Mentors expose a case that involves a dilemma, decision-making. The learner or learners must take a stance in the case and argue in favor of its advantages in relation to other possible decisions. Mentors lead the conversation, focalize the analysis, add information, affirms knowledge. The pertinence of the decisions made by the mentees, their argumentation, the resources in play in the discussion can provide evidence for evaluating the quality of their learning.

## Learning portfolio

This is the most recognized procedure in the recent literature on mentoring, which perhaps best expresses and reveals the learning obtained in the mentor-mentee relationship. There are several kinds of portfolios, but, essentially, they are organized collections of documents, products, evidence, works or any other resource that enables learners to show what they were capable of doing and reflect on their own learning path. In the digital era, a practical tool for this would be through the production of a webpage (easily self-designed, such as the Wix platform), the creation of a blog or the organization of an electronic portfolio on Google Drive or an equivalent technology.

## Interaction analysis

One of the most significant variables in the mentor-learner relationship is their interaction: How frequent is it? How do they take turns to speak? What type of relationship is created? What do they share in this interaction? There are diverse interaction analysis instruments that can answer these questions? Some focus more on an in-depth analysis of the interaction in the case of multiple or distributed mentoring, such as sociograms. Yet others derive from discourse analysis (Schegloff, Goodwin) and serve to disclose the qualitative meaning of communication. These conceptual and methodological tools can be applied to a recorded mentoring experience (online videos of the meetings) or to digital platforms that pick up the participants' interaction, such as discussion forums on Blackboard. The purpose of implementing them is to reveal or measure the value of this learning experience.



# Benefits

The benefits of mentoring have been extensively described by the specialized literature (Albanaes et. al., 2015). In contrast to what occurs in a school course, where the effects on learning are pre-established, there are many benefits in a mentoring process that emerge from the evolution of the relationship and its exploration. The following list is just an overview of some of the most visible benefits.

1

Mentoring offers mentees access to the perspective of the expert as a living source of knowledge.

2

Mentoring is an empowerment process in which mentors help their mentees to define objectives and travel along the path to achieve them.

3

Mentoring focuses on the mentee's strongest aspects.

4

Personalized, timely feedback is obtained in moments of difficulty or doubt.

5

Mentors and mentees can project a long-term learning process.

6

Mentoring is a dialogue-based learning process and a practice grounded in mutual respect and curiosity.

7

It involves a consistent accompaniment along the path which comprises a strategic resource for maintaining motivation in the face of highly complex challenges.

8

Mentoring is self-regulated: the mentor and mentee establish action plans for the continuous improvement of the educational process.

9

It is a relationship with a broad scope and high potential, since it is normally long term and addresses both professional and personal development.

10

It is a system in which knowledge is constantly put into practice: reflection between the mentor and mentee about each significant event in the process makes it possible to apply what has been learned.

11

Mentors also benefit from their mentees, since teaching them boosts their self-esteem and satisfaction.

12

Mentors accompany mentees through their first professional experiences. This helps them to become familiar with another perspective and other generational resources.

13

Mentors constantly remain current and constantly learn.

14

The experiences shared by mentors and mentees also benefit the student community, the university and society, because opportunities for improvement that exist in any context are identified.

# Relevance for Tecnológico de Monterrey



Tecnológico de Monterrey has fomented a series of initiatives, such as i Week , Entrepreneurial Challenge with a Sense of Humanity and Leaders of Tomorrow, among others. These initiatives put into practice the idea of linking degree courses, students' personal projects and institutional entrepreneurial activities, to achieve each one's objectives in an articulated manner. Mentoring plays a very important role in these orchestrated strategies, because it situates the mentor as a key piece in the strategic follow-up of the activities in which students are involved and gives the mentor joint responsibility for attaining the established goals.

In these educational experiences, mentors motivate, advise, guide and rate, while also contributing to students' professional connection with agents from outside the university and driving the development of networks that enable students to integrate into the work environment. Nevertheless, the mentors do not make the decisions, but offer guidance on the basis of their experience, knowledge, contacts, etc. Therefore, those who play the role of mentor at Tecnológico de Monterrey foster students' reflection during their respective learning process.


In some cases, Tecnológico de Monterrey is migrating from the figure of the teacher to the figure of the mentor. This happens because many teachers are being invited to participate with students in the formulation of their life and career plan and, subsequently, to follow up in depth on the same. Therefore, teachers are assuming a crucial role to help young people make a decision about their academic and professional development.

In addition, students' opinions on the mentoring they are receiving offer a highly positive panorama about the implementation of this strategy in the institution, since the majority feel accompanied, guided and well directed, not only by their class teachers, but also by Tecnológico de Monterrey's alumni (known as EXATEC) with whom they might forge a mentoring relationship.

# Relevant cases at Tecnológico de Monterrey

## **Professor Miguel Angel Rodríguez Montes**

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 Campus Querétaro


In the Entrepreneurial Student Program of Campus Querétaro, students have access to a wide network of entrepreneurship experts (teachers, alumni or external entrepreneurs). Once they establish the main need or difficulty of their business project, the most specialized mentor in that area is sought and they contact each other by e-mail. Subsequently, both parties agree on when and how they will develop the relationship.

In the second stage of development, the idea is to create a virtual platform to expedite mentor-mentee choice and collaboration. On the platform, students can consult each mentor's profile and contact him or her directly. The next stage in this mentoring program would be to scale the model and use of the platform up to the national level.

Although their impact has not yet been formally measured, it has been demonstrated that mentoring projects perform better in their problem-solution fit and product-market fit validation phase. In addition, they have also been the best projects for participating in entrepreneurship and incubation competitions or more specialized entrepreneurship programs.

## **Professor Magali de los Ángeles Lara Lugo**

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 Campus Sinaloa


In 2015, Mentoring 360° was implemented for the first time at the Campus Sinaloa. It consisted of a multiple mentoring model between teachers and students, at the high school and undergraduate levels. First of all, the teachers developed peer-to-peer mentoring relationships. The peers would meet periodically to establish goals and obtain support to achieve them. In turn, each teacher mentored students who had been having some sort of difficulty in learning or in their relationship with the class or the teacher.

Among the teachers, one of the most significant achievements was an improvement in relationships and interaction among colleagues, as well as in individual personal and professional accomplishments obtained with the support of mentoring. Students reported having experienced a better relationship with their teachers, and improvement in their

motivation and attitude toward academic challenges. Mentoring also provided them with a space where their problems could be heard. In total, 26 teachers and 47 students participated. In the case of students, two of whom were in danger of failing, passed their courses. Meanwhile, three of the new teachers rapidly adapted to the institution.

## **Professor Magali de los Ángeles Lara Lugo**

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 Campus Sinaloa

During the January-May 2017 semester, a pilot mentoring experience was implemented at the Campus Sinaloa, this time between Tec alumni and students in the last semester of their degree programs. The mentors selected have outstanding achievements and a minimum of five years' experience in their profession. The strategy forms part of students' Life and Career Plan. The objective is to help them be better prepared to join the workforce and guide them in making decisions about their future.

Mentoring consists of a minimum number of hours (16) in which the mentor and mentee must meet to develop their relationship. The meetings are agreed upon between them. There were five students and five mentors in the first group. The experience was a good observatory of the topics addressed in these mentoring meetings: job interviews, CV creation, teamwork, time management, organizational climates and digital environments. As part of their experience, students visited their mentee's office or workplace and had access to a wider range of professional contacts. The recommendations for this program's continuance include, in particular, providing greater support for the mentor-mentee meetings.

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 Campus Estado de México

Mentoring merges, in this case, with the work of an educator who teaches, on the one hand, technical subjects, such as Control Engineering or Computerized Control, and, on the other, comprehensive education subjects, such as Introduction to Professional Life and Leadership Workshop. He incorporates self-improvement content and dynamics and endeavors to make students aware of their own capacities to achieve their goals and have full lives.



In the words of the teacher, “Generating the belief (based on facts) that they can do anything they want to in life, nothing is impossible and only they set limits.”

This group mentoring implies, in this case, the teacher’s availability to mentor any student who approaches him to learn. The mentor commits to offering 45-minute sessions with the mentee, one session per week, with at least ten sessions. The frequency of the meetings gives the mentor greater insight into the mentee’s background and evolution. To date, the mentoring sessions have created a positive impact on students’ self-confidence and on the quality of their relationship with their environment (university and family).

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 Campus Estado de México

Tecnológico de Monterrey is implementing a widespread curricular transformation process with the aim of evolving from a program of study based on subjects to one progressively based on projects. One of the most ambitious products of this plan is Semester i in which students from different bachelor’s degrees can participate in the development of challenges. Each challenge involves solving a problem or reaching an objective in the outside world, for which students need to get out of the classroom and interact in social or professional spaces.


In the case of Semester i, Mikel’s 2017, the teachers gradually incorporated broader mentoring functions into their accompaniment efforts, of being present in students’ challenge resolution process. Although at first students’ consultations were of a technical nature, related to operating procedures and capacities, as they integrated into the process, their doubts became of a more social and ethical nature.

For the teaching team, entering into the territory of mentoring, without specifically mentors, implied the challenge of building agreed upon criteria for these broader guidance and orientation efforts, which implied more collaboration and coordination than originally imagined.



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 Campus Veracruz

During the August 2016 semester, the program Entrepreneurial Challenge with a Sense of Humanity was implemented to help new students to adapt to Tecnológico de Monterrey’s educational model. Tec alumni were invited to act as mentors and were given training in guiding the development of the projects proposed by students.

The key objective of the challenge was the generation of financial resources to finance social outreach projects in the region. The mentors guided the young people in the definition and implementation of a productive learning project. They worked side by side with the teams since it was of utmost importance for the students to attend every day each of the steps posed in the challenge.

In addition, they were responsible for reviewing the learning evidence presented by students during the activities and for offering the necessary feedback to improve the project’s operation and the end product. The mentors never had the last word in the teams’ decision-making, since ultimately the students had to determine what to do and how to achieve the goals.

# Relevant cases at other institutions

## National educational programs

In some countries, governments develop mentoring programs as part of the public education agenda. There are mentoring programs in which veteran teachers help new educators in their first professional practice. Others foster support networks between teen students to oversee their integration into the school system. These are examples of just a few of the many directions these programs can take, but actually there are multiple initiatives at the international level. The following are examples of some of these initiatives.

### PROA (Accompaniment Program)

- Country: Spain
- Educational level: Secondary

The Reinforcement, Orientation and Support Plan (PROA), in conjunction with the Spanish government's plan, seeks to improve the quality of state-run primary and secondary schools. It includes, among others, an Accompaniment Plan, in which outstanding students given their maturity or capacity to connect with 12- to 16-year-olds, are appointed as mentors ("monitors") of teen students with learning difficulties or who are at risk of dropping out.

### Training for Novice Teacher Mentors (TNTM)

- Country: Chile
- Educational level: teacher training

To foment the professional training of teachers who join the educational system in Chile, the TNTM program follows a mentoring model in which mentors and mentees choose a pedagogical-professional dilemma and around this develop the accompaniment of the teachers in their investigation-action process. Mentors must complete a program consisting of 120 hours of training and 180 hours of guided work practice with the novice teacher.

### TELL (Teaching English Language and Literacy)

- Country: Malaysia
- Educational level: teacher training

The educational reform undertaken in Malaysia in 2011 implied the need to train teachers in a student-centered active pedagogy. In the area of English, the TELL teacher training program was supported by a coordinated network of 120 mentors for 600 schools. Unlike events in previous failed educational reforms, the assistance of the mentoring

program in the implementation of the reform has been key to improve teachers' self-confidence and change in pedagogical practices (Lyne, 2013).

### Mentor Classroom

- Country: Spain
- Educational level: professional training

Many adults prefer flexible, online training. The Spanish Ministry of Education launched an online mentoring program to drive lifelong learning. The program encompasses a network of more than 400 support classrooms in different types of educational environments (schools, educational embassies of Latin American countries, public councils, NGOs). It obtained recognition as one of the 14 good educational practices in a European Union study.

## Civic initiatives

Mentoring is a training model based on a relationship, accompaniment or dialogue. This model can help incorporate those who are at a disadvantage onto the path to success in school or at work. This is why civil organizations and civic collectives are developing different forms of mentoring to help the most underprivileged get on the track to social integration. The following are a few examples of this in the USA, Peru and Australia.

### iMentor

- Country: USA
- Educational level: High School

This non-governmental organization promotes a virtual mentoring relationship between successful university students and low-income junior and senior high pupils. The objective of mentoring is to help them on their journey to university. Data from this learning process are used to construct a better mentoring model and to observe the impact it has on academic performance. Students who participate in the program have a 25% higher possibility of reaching university than their peers in similar school contexts.

### Mentor Peru

- Country: Peru.
- Educational level: vulnerable young people.

Mentor Peru is a non-profit organization that "multiplies human talent with virtual mentoring". Through its mediation, a network of Peruvian mentors who have been

successful in their professional lives anywhere in the world, develop an online mentoring relationship with vulnerable young people. The objective is to reduce the country's gap in opportunities and drive the entrepreneurial and innovative capacities, particularly in science and technology, of underprivileged communities. In a survey on this program developed in Ayacucho (Andes) and Moyobamba (Amazonas), 97% of student mentees responded that they would like to stay in the program.

#### **AIME (Australian Indigenous Mentoring Experience)**

- Country: Australia
- Educational level: Junior and Senior High School

AIME is a mentoring program that helps teen Indigenous students to finish school and have access to a university education or better jobs. The mentors are volunteer non-indigenous university students, who help these kids with their homework. The program has been a success. In 2013, it began with 25 mentors and now has more than 2,000 mentors and 6,000 students. An assessment of its impact revealed that, in comparison with non-participants, two times more mentored students completed their high school studies.

### **University programs**

Mentoring has been explored in universities in multiple ways. Its use predominates in programs for university student induction, degree-long follow-up, and, finally, support to join the workforce or pursue further studies. However, it is also being applied in graduate students and researcher training. The following cases offer a brief explanation of a broad panorama of the latest mentoring programs in diverse country across the globe.

#### **Tutorial Action Program**

- Country: Spain
- European University of Madrid

This plan tracks students from their matriculation to their graduation. A tutor is assigned to a student to train him or her through coaching and mentoring workshops. The tutor's role is not limited to supporting students in the degree program, but also helping them in their future incorporation into the workforce, investigating the most viable options in relation to their current preparation.

#### **Honors Program**

- Country: Mexico
- Universidad de las Américas-Puebla

The university invites high-performance students from each area to participate as collaborators in a research or artistic creation project designed by a "mentor". The mentor is a distinguished university academic who tutors and accompanies these students in the joint development

of this project throughout their degree program. Hours devoted to activities assigned by the mentor count as student scholarship service hours.

#### **Pedagogical laboratories**

- Country: Colombia
- Universidad del Norte

The CEDU (Center for Teaching Excellence) created this training and support initiative for university professors who are interested in innovating their classes. They are provided with a multiple mentoring network, with CEDU advisors, colleagues with whom they form a classroom research community, and student interns who support teachers in the use of technology or the design of didactic materials (Castro and Martínez, 2017).

#### **Mentoring**

- Country: USA
- Washington University

The program offers different mentoring paths and models for graduate students, who can choose a mentor or decide on a heterogeneous team of mentors. The mentors are outstanding members of the university or the external professional environment who meet the exit profiles. Students can also access international mentors through a network of universities that have entered into this agreement.

#### **MySci Advisors**

- Country: Canada
- University of Windsor

Implemented in 2013 at the Faculty of Science of the University of Windsor, this program seeks to help new students to successfully integrate into the academic life of their degree program and into the university. Mentors, who are recruited voluntarily from among students in their last semesters, receive training and report to the university every month on the progress of their mentoring (Poling, 2015).

#### **Hub and Spoke Mentor**

- Country: South Africa
- Vaal University of Technology

This program is applied in a South African technological university, in a context where strengthening research is vital. The university adopts as mentors leading researchers in their fields and facilitates a network of structured relationships (according to the Hub Spoke Model) with graduate students (Maritz, Visagie and Johnson, 2013). The program focuses on driving doctoral students from their initial position towards full participation in the academic community.

### Women's Group Mentoring

- Country: Australia
- University of Canberra

The program consists of a peer-to-peer mentoring model among academic women of different ages, institutional roles and biographical profiles to provide mutual support in their careers. Since its initiation in 1999, the number of participants who have completed the program is close to 250. Studies have shown its impact on improving the professional level and boosting confidence (Collins and cols., 2014).

### Catalyst

- Country: New Zealand
- University of Auckland

This mentoring program target academics from different fields who have recently joined the university. They follow a dual peer-to-peer mentoring model with regular meetings between the two peers and topic-specific group mentoring sessions led by a more experienced academic. The purpose is to expedite the new academics' capacity to be effective and strategic in their work and to become familiar with the institutional expectations of their academic lives (Kensington-Miller, 2014).

### IPTeC (Indiana Pharmacy Teaching Certificate)

- Country: USA
- University of Indiana

Pharmacy students from the University of Indiana have the opportunity to be mentored by prestigious faculty members to drive their track record in academic pharmaceuticals. The program has been a resounding success. Almost all the participants (99%) assessed the mentoring received as important or very important in their academic/professional development (Sheehan and cols., 2016). Demand for the program has grown so much that external mentors from neighboring universities and other health professionals have been invited to participate.

### Mentoring Programme in Action

- Country: Greece
- Aristotle University of Thessaloniki

This is a peer-to-peer mentoring program at the English School, consisting of a network of one-on-one mentoring relationships between advanced and new students. The objective is to help them to expedite their acquisition of the language (all students have to graduate with approximately a B2 proficiency level in English). One of the program's main benefits is the wealth of English learning resources and strategies and the way in which together they build their own tailor-made learning environments (Everhard, 2015).

## Online mentors and mentees

As Dan Gillmor (2005) says, one of the most radical changes the Internet has brought into our daily lives is the possibility of each individual being a global communication medium. We no longer rely on official, professional, communication media. Twitter or YouTube offer us instant access to a worldwide audience. Therefore, the example of a modest teacher-mentor in Japan can resonate anywhere in the world. Or a Spanish teacher can upload his teaching-mentoring model onto the Internet. Mentoring can also be distributed in communities and forums in which participants create their own peer-to-peer mentoring mechanisms. These online mentor and mentoring cases are shown below.

### Toshiro Kanamori: "Children Full of Life"

The work of a humble teacher, Toshiro Kanamori, in a suburban primary school in a city in Japan is portrayed in one of the most viewed online documentaries on education, "Children Full of Life". In the first scene, on the first day of school, Kanamori reminds the students of the fundamental purpose of the class: "to be happy". The documentary tells the story of Kanamori's mentoring through dialogue with students and his capacity to steer the class toward a common learning experience of happiness.

### Carlos González: "Among teachers"

Carlos González is a high school math and physics teacher with over 20 years' teaching experience. He left the classroom to write a book, "23 Maestros de Corazón" (23 Teachers from the Heart) which portrays his mentoring-based educational utopia. The book gave rise to the idea to produce the online open-access documentary film, "Entre maestros" (Among Teachers), in which Carlos puts his pedagogy to the test with a group of teenagers for twelve days. As a teacher-mentor, Carlos empowers his students, challenges them to build their own knowledge by confronting the current paradigms of science and philosophy and the cultural practices of their generation.

### Zemos Collective: "The Expanded School"

Zemos is an urban collective born in Barcelona that promotes educational interventions in schools and high schools. This includes the implementation of a peer-to-peer mentoring model in which each student learns skills from others and, in turn, shares what he or she knows. This knowledge exchange goes beyond the school setting to invite the community to participate in the same dynamic. The documentary "The Expanded School", shared on YouTube, narrates the transformation of this mentoring program in an institute located in a troubled neighborhood in Seville.



### David Calle: Math Teacher on YouTube.

In the midst of the Spanish economic crisis, David Calle created Unicoos, a video platform in which David records himself answering questions and explaining math lessons. Its impact went global, with over one-hundred million views and almost half a million subscribers and led to David being nominated for the 2017 Global Teacher Prize. David generates this global mentoring experience from his home, with a set of very simple tools – a blackboard, a camera and some lighting screens. His website promotes discussion forums for comments and to solve any questions about the content of the videos.

### Todoele Community: online mentoring for language teachers.

Todoele emerged as a learning resource portal for Spanish teachers and became a social network with over 11,000 teachers from all over the world. In the community, some members manage the site and occasionally mentor those who participate. Colleagues use this network to access digital class materials, answer questions and share their knowledge. Although it doesn't offer a formal mentoring program, but rather an ecosystem that favors online mentoring, with a set of devices and settings to learn from others and collaborate on shared projects.

### #ECRchat: mentoring on Twitter for novice researchers

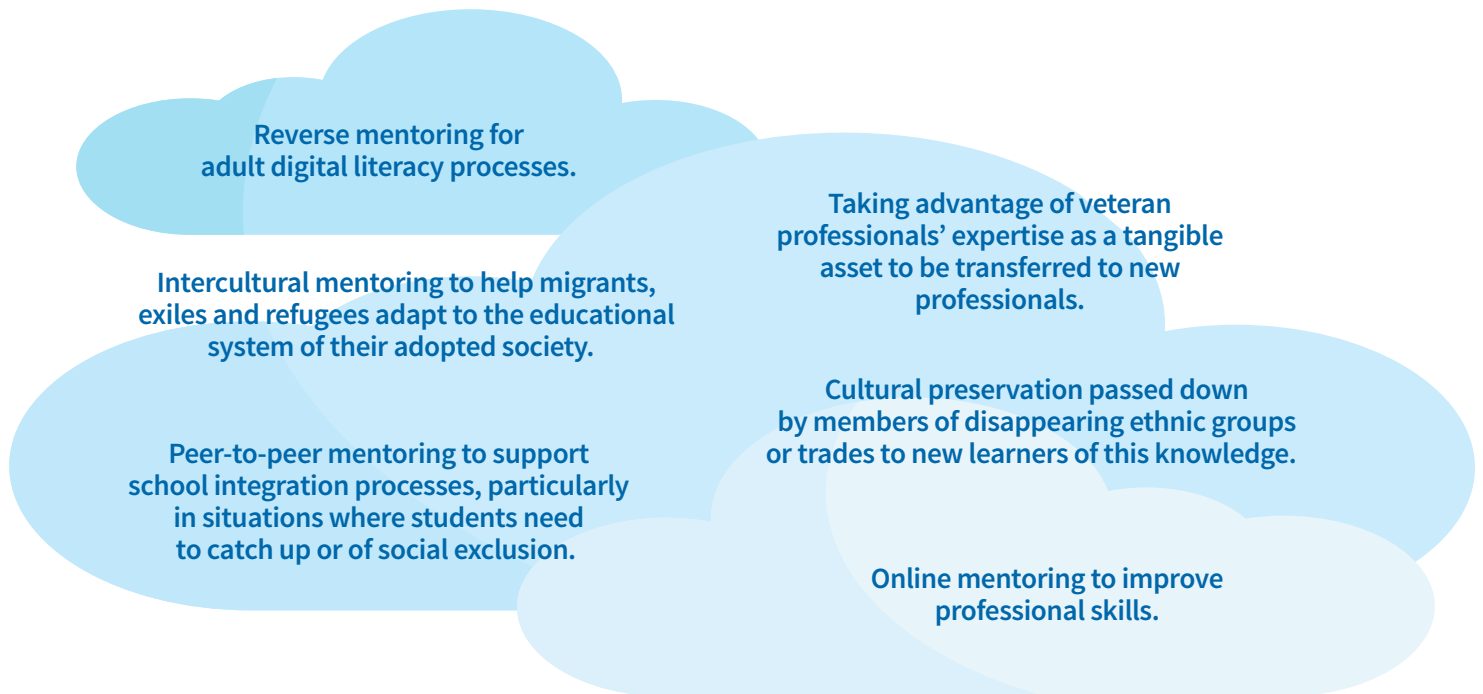
Through hashtag #ECRchat (ECR= Early Career Researchers), Ferguson and Wheat created a discussion forum to offer guidance and support for trainee researchers in their careers. Discussion topics are selected by members through online voting and participation is managed by members who voluntarily take on the role of hosts. The forum is not just a discussion space, but also a peer-to-peer mentoring device, generating sources of support and an organic shared knowledge generation system.



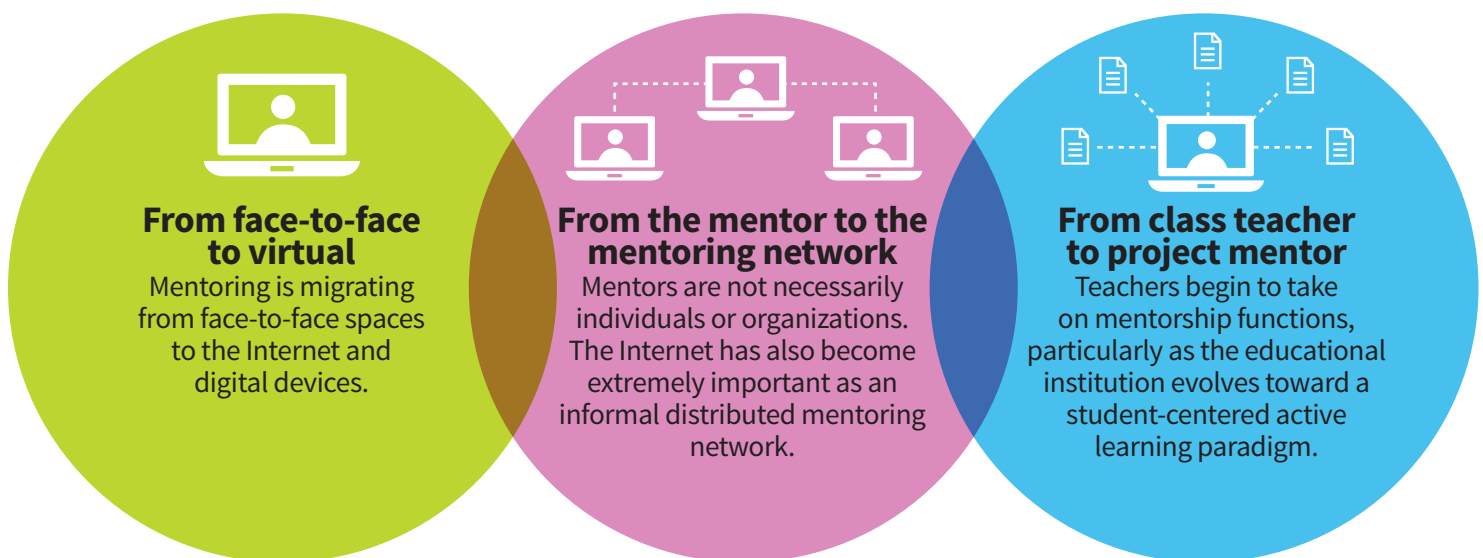


# New trends

Mentoring is gaining prestige in the multiple contexts in which it takes place (educational institutions, companies and online environments), particularly in response to the growth of diversity (cultural, lifestyles, ways of learning), to global interconnectivity and to the need for orientation in the constantly changing environmental conditions. In this global, liquid context full of uncertainty and potentials for mentoring, a series of particularly valuable applications have recently emerged:



Despite the heterogenous nature of the different mentoring programs, a few evolutionary trends can be seen:



# A critical look

**Mentoring occurs naturally in integral, flexibly-developed, interactive educational processes, and this organic logic clashes in many ways with instructional logic, which is based on disciplinary subjects and still predominates in education.**

Although there is strong evidence of the impact of mentoring on mentee performance, most studies stress the testimony and perspective of the participants, but without specifying how far and concretely in what way mentoring was the main cause of their improved performance in competencies. Many of the benefits it offers are not easy to measure, such as self-esteem, empowerment or improved decision-making. Therefore, its impact on learning needs to be studied in greater depth.

Mentoring is less regulated than other educational activities and depends more on the intersubjectivity between the mentor and the mentee. This means that there are certain risks in this type of accompaniment processes in education, which must be taken into consideration:

## Risks of mentoring

Mentors transfer to mentees their own convictions, thus biasing their learning path.

Unequal commitment and interest of each party in the relationship.

The interaction can also move toward knowledge that does not form part of the objectives established at the beginning and go too far off course.

Mentoring becomes a relationship that cannot easily be regulated, controlled, evaluated and transferred within the institution.

Those who wish to foster mentoring in their institutions will have to accept beforehand the high levels of uncertainty, greater than those involved in more instructional educational models.

# Challenges

Some people are still wary of mentoring, given the flexibility of its teaching-learning processes and the risks described in the previous section. Its use in the field of education faces diverse challenges:

## Mentor training

Professionals who wish to act as mentors, sharing their knowledge and expertise in a specific field, must receive training related to human resource consulting or development in order to effectively transmit everything that makes them specialists in the subject, but they should also be capable of achieving the comprehensive development of the individuals they are accompanying.

## Barriers put up by instruction-based institutional ecosystems

Mentoring stands in opposition to teacher-centered educational models because the mentor-mentee relationship involves constant collaboration. Evidently, the core of the teaching-learning process falls on the person who is learning and decisions depend on his or her point of view. Therefore, institutions that are not yet following a competency-based pattern represent a challenge for the implementation of this trend.

## Mentoring assessment

To determine the impact of mentoring, the mentor needs to set clear objectives at the start of the accompaniment process, thus assuring effective, reliable outcome measurement. Since mentoring is susceptible to the mentor's bias, maintaining the objectives until the end of the process is quite a challenge for all those involved.

## Financing

The implementation of mentoring in any organization requires an investment in economic and human resources. The provision of resources starts with training in the mentoring program to be used, continues with the follow-up costs and ends with the evaluation of its impact on the institution.

## Program design

Mentoring must form part of a coordinated, well-articulated structure, considering the diverse projects to be linked for mentee training. An adequate program that has been designed based on the participants' context will most likely offer successful results for the individual and the community.



# Recommended actions for teachers

The recommended actions have been drawn from a literature review and the experiences shared by Tecnológico de Monterrey's mentors with the Observatory of Educational Innovation. Teachers who are interested in becoming their students' mentors should take the following recommendations into consideration:

- **Be mentored** by a more experienced, renowned or admired colleague to experience the benefits, limitations and complexity of the mentor-mentee relationship.
- **Become an expert** by specializing in a specific type of knowledge, skill or by gaining prestige and visibility within the professional/academic community.
- **Train as a mentor**, both formally through workshops, diploma courses, etc. in key competencies such as emotional intelligence assertive communication or professional ethics, and informally by observing other mentors, creating a personal learning environment, etc.
- **Cultivate empathy** with the mentee by promoting the development of a personal connection of mutual respect, trust and appreciation.
- **Define and personalize the relationship**, establishing agreements about what, how, where mentoring will take place. These agreements can be tacit, although it is a good idea to explain them, discuss them directly.
- **Make the relationship horizontal**, starting with not viewing the student as someone who is intrinsically inexperienced and inferior, but rather as a person with an inspiring potential and notable developing qualities, like a companion on a journey in which the mentor simply plays another role from which he or she also learns and develops.
- **Monitor the mentoring**, which can be done with more formal instruments (questionnaires, ethnographic notes, interviews) or in a more intuitive manner. What's most important is for the mentor to reflect on the mentee's learning process and the development and effect of his/her own mentorship (Figure 1).

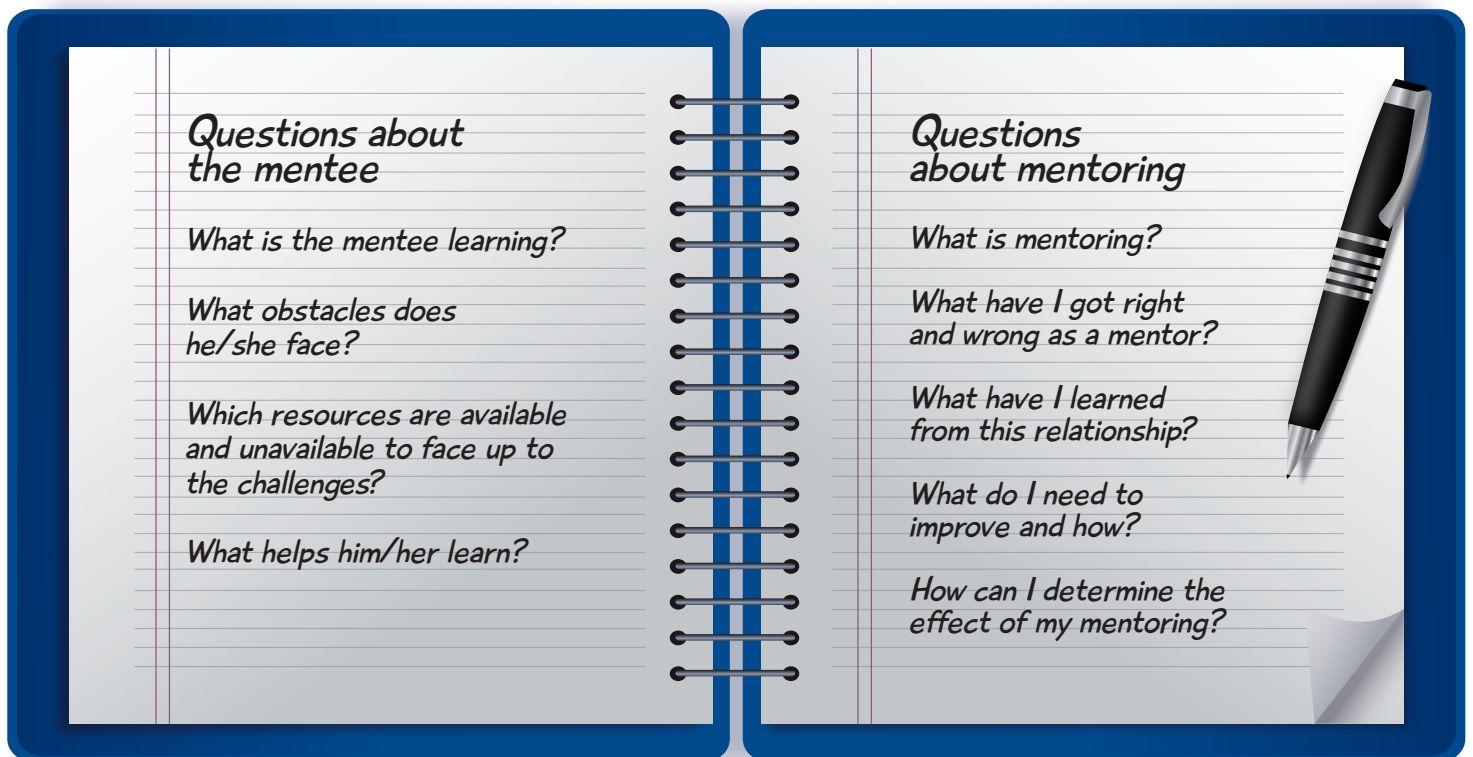


Figure 1. Question cloud for monitoring a mentoring process.

# Actions recommended for academic leaders

**Mentoring is a motivational and learning tool for organization directors. It serves as an accelerator for those who are responsible for learning quickly in order to execute institutional leadership activities, and drives leaders' talent, knowledge and experience.**

Based on this premise, the implementation of mentoring in educational institutions requires educational leaders to:

1. Be willing to assume the role of mentors to advise both faculty and students.
2. Train to act as mentors.
3. Invest in their own training and in that of the human talent who will serve as mentors within the institution.
4. Work on connecting students and faculty with other leaders who could take on the role of mentors in institutional projects.
5. Participate in creating mentoring programs to offer a global vision of leadership.
6. Form part of the mentorship program assessment process.
7. Write about successful cases in which they have participated as mentors or mentees in order to generate a database that serves as a geode for other leaders, faculty and students.
8. Assume the social responsibility conferred upon them by the comprehensive preparation of an individual through mentoring.



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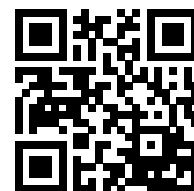
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