Topic. Theoretical foundations and essence of management decisions

Lecture 1-2

Over the decade, the role of managers has changed considerably. Once seen as people who keep everything ticking behind the scenes, managers now have a much more visible role as leaders within an organization. While this shift in perception has made them more visible, it also means that managers need to be able to demonstrate how they make decisions on a day-to-day basis.

Whether you are an aspiring manager or already manage other people in your organization, understanding project definition, different techniques for making decisions will help you to both delegate tasks and make the right choices when necessary.

In this lecture, we will take you through some of the most common methods used in Decision making in management and offer advice on when each one is most useful.

What is Decision Making in Management?

Decision making in management is the process of making a choice between two or more options. This involves evaluating the pros and cons of various choices and choosing the best option to achieve a desired outcome. In management, decision making is about acting in a way that meets organizational goals and objectives.

For example, a business manager may decide to invest in marketing to attract new customers. This decision could involve analyzing the costs, benefits, and risks involved with each possible course of action and choosing the best course of action for the organization.

Management decision is an important part of managing any organization. It allows managers to set goals and figure out what actions are needed to meet those goals and evaluate whether those actions are working as intended. Management decision meaning refers to managers guiding their organizations down the right path toward success.

1. Rational-thinking

Rational thinking is a process in managerial decision making that helps us to make sound decisions. It involves systematically analyzing options and choosing the best course of action based on logic and evidence. To think rationally, we must first identify our goals and objectives.

2. Process

Many people view decision making as a cold, rational process. However, there is much more to it than simply choosing the most logical option. In reality, decision making is influenced by a variety of factors, both conscious and unconscious. For example, our emotions play a role in the decisions we make, as do our personal values and beliefs.

3. Selective

A key characteristic of managerial decision making is that it is selective. That is, deciding involves picking the best options. There are many factors that influence what gets selected, including the clarity of the options, the relevance of the criteria, and weighing the various factors.

4. Purposive

A purposive approach to decision making is one that is based on the specific goals and objectives of the individual or organization. This type of decision making takes into account the desired outcome of the decision, and considers all of the available options in order to select the best possible course of action.

5. Positive

Decision making process in management is an essential skill in any area of life, whether you're choosing what to eat for lunch or deciding which company to work for. While there are many different approaches to decision making, there are some common characteristics that tend to lead to positive outcomes.

6. Commitment

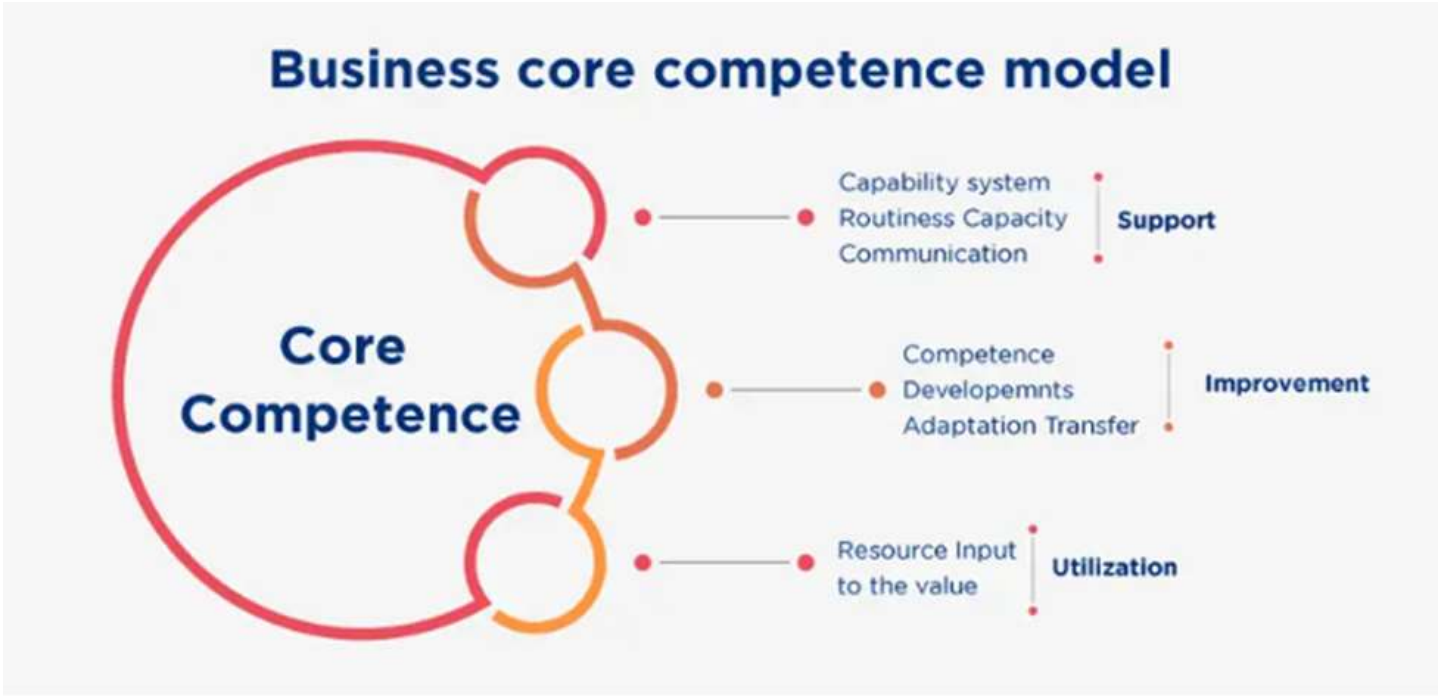
If you want to make successful decisions, it is crucial that you have commitment. This means having the drive to see the decision through, even when it gets tough. It also means being able to defend your decision to others, even if they do not agree with you.

7. Evaluation

Evaluation is a key characteristic of good decision making. This involves considering all of the options and weighing their pros and cons before making a choice. It is important to be as objective as possible when evaluating the different options, and to look at the situation from all angles.

What is Decision Making Process?

Decision making in operations management is the process of choosing among alternatives. It involves considering various factors, assessing the costs and benefits of each option, and making a decision that takes these factors into account. The goal of any decision-making process is to reach a conclusion that is as informed as possible given the available information.


Business core competence model
Core Competence
Capability system
Routiness Capacity
Communication
Support
Competence
Developemnts
Adaptation Transfer
Improvement
Resource Input
to the value
Utilization

Decision Making Process in Management with Example

Let us check the decision-making process in management with examples.

1. Establishing Objectives

Establishing objectives is among the crucial decision-making steps in management. Without clear objectives, it can be difficult to make effective decisions that will help the organization meet its goals. Establishing objectives involves setting specific goals that need to be achieved within a certain timeframe.

For example, if you are the CEO of an e-commerce start-up with your business expanding, you would want to hire the right employees for various roles. Firstly, you would have to establish your objectives regarding which parts of your business you would need to hire new people.

2. Identify the Decision

The next important step in the decision-making process in management is identifying the problem that needs to be addressed. Once the problem has been identified, the manager will gather information about possible solutions. This may involve consulting with others, doing research, or running simulations. After weighing the pros and cons of each option, the manager will choose the course of action that they believe is most likely to succeed.

For example, after establishing the objectives regarding which parts of your business need new recruits, you would have to identify the course of action with others to recruit the ideal employees for the various job roles.

3. Gather Appropriate Information

This process of gathering information is known as information gathering. The different sources of information that managers can use include surveys, interviews, focus groups, observation, and secondary data sources such as articles and reports. After gathering this information, managers must then analyze it to determine which option is best.

For example, after identifying the course of action for the new recruits, you, along with your team, have to gather proper information about the various hiring trends and how to recruit the ideal talents.

4. Identify the Alternatives

One of the most important aspects of the decision-making process in management is identifying the alternatives. Without knowing what your options are, it can be difficult to make an informed decision. There are a number of different ways to identify the alternatives, but some of the most common methods include brainstorming, research, and consultation.

For example, after gathering the appropriate information on how to recruit the ideal talents, identify what alternatives you can offer to attract talents. Like, can you offer remote working or a hybrid working model?

5. Weigh the Evidence

When we define decision making in management One key step in this process is known as 'weighing the evidence'. This simply means taking the time to consider all of the available information before making a final decision. This can include things like market research, financial data, and even gut instinct. By taking the time to weigh the evidence, managers can make better-informed decisions that are more likely to lead to success.

For example, after identifying what alternatives you can offer to attract new recruits, consider all the options to understand which would be the most profitable for your business. For this, you can take insights from market research, financial data, and even gut instinct.

6. Choose Among the Alternatives

One of the most important decisions that a manager has to make is which alternative to choose. There are multiple ways to approach this, such as by first considering all available alternatives, then assessing each against an explicit set of criteria. Finally, choosing one alternative over another could depend on other factors such as political considerations and the influence of stakeholders.

For example, after considering all the alternatives and research regarding hiring new recruits, choose the alternative which is the most profitable for your business.

7. Take Action

There are many approaches to decision making, but one of the most popular is the "take action" approach. This approach involves taking decisive action in response to a problem, without overthinking or second-guessing yourself. While this approach can lead to quick results, it also carries the risk of making impulsive decisions that may not be in the best interest of the company.

For example, after choosing the most profitable ways to hire new talents, take the course of action of searching and interviewing the individuals.

8. Review the Decision

Finally, after a decision has been made, it is important to review the results and make any necessary adjustments.

For example, after hiring the new recruits, review the whole process to see where you can make some changes to make the process more efficient.

workshop1:

- Read one of the articles of your choice
- express your opinion on the content of the article from a pro or con position
- to organize your thoughts in the form of 2 slides, one pro and one con
- to argue your opinion with your own experience and give an example

articles for preparation:

https://www.timeshighereducation.com/counsellor/counselling/how-psychology-decision-making-can-help-students-choose-universities

https://www.ijsre.com.ng/assets/vol.%2C-13(5)-ehule---ehule.pdf

https://www.redalyc.org/journal/3334/333473387005/html/

Topic. Theoretical foundations and essence decision making styles

Lecture 3-4

Decision Making Styles

1. Psychological

Psychological decision-making styles tend to be more creative and flexible, as they allow for gut instinct to play a role in the process. However, this style can also lead to impulsive decisions that are not well thought out.

2. Cognitive

Among the many decision-making styles, one of the most popular is the cognitive style. This involves making decisions based on logic and reasoning, rather than intuition or emotion. When using cognitive style, it is important to consider all of the available information before coming to a conclusion. This can sometimes mean taking a long time to make a decision, but it also means that you are more likely to make a sensible choice.

3. Normative

Normative decision making in project management is a style of decision making that is based on sticking to established rules and procedures. This type of decision making is often used in situations where there is little time for deliberation and the stakes are low.

Techniques of Decision Making

1. SWOT Analysis

One popular decision making a step in management is known as SWOT analysis. This involves identifying the strengths, weaknesses, opportunities, and threats associated with a particular decision. By taking all of these factors into account, individuals can make informed and effective choices.

2. Marginal Analysis

A popular technique is known as marginal analysis. It involves weighing the costs and benefits of each option to choose the one that will create the greatest value.

Strengths

Marginal analysis forces you to think beyond the immediate consequences of your actions. It can help you make better decisions because you will consider how your actions affect other areas of your life.

Weaknesses

It is time-consuming. If you're trying to make a decision quickly, thinking about all the indirect costs and benefits can slow you down. This analysis can sometimes lead to paralysis by analysis. It happens when people get so caught up in thinking about all the possible costs and benefits that they never actually make a decision.

Opportunities

Marginal analysis is that it can help you to identify opportunities that you might otherwise miss. It is because the process of thinking about indirect costs and benefits helps you see the world differently.

For example, when considering whether to buy a new car, you might not immediately think about the environmental impacts of driving. But if you consider the indirect costs and benefits of car ownership, you might decide that buying a hybrid or an electric car is better for you and the planet.

Threats

Marginal analysis only considers the incremental changes associated with a particular decision, and it does not take into account the other factors that may be affected by that decision. The analysis can be misleading if not used correctly, and this is because it only considers changes in absolute terms without taking into account the relative size of those changes.

3. Pareto Analysis

Pareto analysis is a decision-making technique that can be used to identify the most important factors in a given situation. Named after Italian economist Vilfredo Pareto, the technique is based on the principle that 20% of the causes will produce 80% of the results.

Strengths

It is relatively simple to understand and use, meaning that it can be applied in a variety of settings with minimal training. Pareto Analysis is an objective method - it relies on data rather than subjective opinion - which increases its credibility in the eyes of decision-makers. The analysis is flexible and can be adapted to a wide range of problems and organizations.

Weaknesses

It only looks at cause-and-effect relationships and does not consider other factors that may be important. Identifying all of the possible causes of a problem can be difficult, and some causes may be more important than others. Pareto analysis relies on statistical assumptions that may not always be accurate.

Opportunities

It can help you focus your efforts on the most promising areas. Helps you prioritize opportunities so that you can allocate your resources more effectively. Also, it can help you track your progress over time and make necessary adjustments to your strategy.

Threats

It is important to ensure that the data you are using is accurate and representative of the overall population. Pareto analysis can sometimes be biased towards more extreme outcomes. This analysis does not account for all possible factors that could impact a decision.

4. Decision Matrix

Finally, the decision matrix is a tool that can be used to compare different options side-by-side. By using these techniques, individuals can be sure that they are making sound decisions that will lead to positive outcomes.

Strengths

It forces you to carefully consider all of the options and to weigh each one against the criteria. It can help ensure that you do not make a decision based on emotion or instinct. Can help prevent you from becoming overly attached to any option, as you are forced to consider each option objectively. It can provide a clear and concise way to communicate your decision-making process to others.

Weaknesses

One issue is that the criteria used to evaluate the options can be subjective, and it can lead to different people coming to different conclusions based on the same data. Another potential problem is that all options may not be known when the decision matrix is created, leading to inaccurate or incomplete analysis.

Decision matrices can be time-consuming to create and require a significant amount of data, making them impractical for use in situations where time is limited, or data is scarce.

Opportunities

The ability to make better decisions by organizing and ranking options.

- Ability to see the possible outcomes of each option.
- The ability to compare options side-by-side.
- Ability to quickly identify the best option.

Threats

The process of creating a matrix can be time-consuming and may require input from multiple stakeholders.

The results of a decision matrix are only as good as the data that goes into it, and the final results will be misleading if the assumptions or inputs are inaccurate.

Decision matrices can create a false sense of precision, leading to overconfidence in the results.

Types of Decision Making in Management

1. Routine and Basic Decision-making

Some decisions are more complex and require more thought. For instance, you may need to decide what to wear to a job interview or how to handle a difficult customer at work. In these situations, it is important to take the time to carefully consider your options before making a decision. Basic decision-making skills involve considering the potential consequences of each option and choosing the one that is most likely to lead to the desired outcome.

2. Personal and Organizational Decision-making

Decision making is a key component of both personal and organizational success. When making decisions, it is important to consider all of the potential options and their consequences. In some cases, there may be a clear best choice, while in others, the decision may be more difficult. However, the ability to make sound decisions is essential for both individuals and organizations.

3. Individual and Group Decision-making

Individual decision-making process in project management typically occurs when the stakes are low and the impact will be limited to a single person. Group decision making is necessary when the stakes are high or the impact will be felt by multiple people. In general, group decision making is more effective than individual decision making because it allows for a greater diversity of perspectives and more thorough deliberation.

5. Policy and Operating Decision-making

Policy and operating decision making are two important aspects of any business. Policy decisions are made at the strategic level and focus on long-term issues, such as the overall direction of the company. Operating decisions, on the other hand, are made at the operational level and focus on short-term issues, such as which products to produce and how to staff the production process.

6. Tactical and Strategic Decision-making

This is an essential type of managerial decision making. Tactical decision making is important because it helps organizations to respond quickly to changes in the environment. However, too much emphasis on tactical decision making can lead to a lack of focus on long-term goals. Strategic decision making is important because it helps organizations to establish a clear direction and make informed choices about resource allocation. Both tactical and strategic decision making are necessary for an organization to be successful.

7. Planned and Unplanned Decision-making

There are two types of decision making in management: planned and unplanned. Planned decisions are those that are made in advance, after considering all the options and their possible outcomes. Unplanned decisions, on the other hand, are those that are made on the spot, without any prior consideration. Both types of decision making in management have their own advantages and disadvantages.

8. Organizational, Departmental, and Interdepartmental Decision-making

Organizational type of managerial decision making is the process of identifying and choosing the best course of action to achieve organizational goals. It includes both formal and informal methods of decision making, and it occurs at all levels of an organization. This is one of the managerial decision-making examples that managers have to be great at.

Interdepartmental decision making is the process of identifying and choosing the best course of action to achieve interdepartmental goals. It occurs at all levels where two or more departments interact.

Organizational, departmental, and interdepartmental types of managerial decisions making are all important aspects of an organization's operations, and each type of decision making has its own benefits and challenges.

Difficulties in Decision Making Process

Any decision-making model in management made by an individual or organization has the potential to be difficult. There are many factors that can contribute to difficulty in decision making in software project management, such as unclear objectives, lack of information, and emotional attachments. Here are five of the most common difficulties that can arise during the decision-making process:

1. Avoiding Discomfort

Without clear and specific objectives, it can be difficult to decide which course of action to take. This is often a problem when organizations are facing new challenges or opportunities.

2. Consultation Ambiguity

Not having enough information about a situation can make it difficult to identify all of the possible options and their potential consequences. This can lead to decisions that are based on gut feeling or incomplete data.

3. Blind Spot

When individuals or groups have strong emotional attachments to an issue, they may find it difficult to be objective in their decision making. This can lead to decisions that are driven by personal biases rather than what is best for the organization as a whole.

4. Indecisive

When multiple people are involved in the decision-making model in management, group dynamics can complicate matters. disagreements over objectives, differing opinions on the best course of action, and power struggles can all contribute to difficulty in reaching a decision.

5. Group-thinking

Sometimes, decisions must be made quickly, without adequate time for careful consideration. This can lead to rushed decisions that may not be well thought out or optimal.

Conclusion

A project manager has the role of decision making in management. A good decision maker is someone who is able to consider all the facts and options before making a decision. They also need to be able to take into account the long-term consequences of their decision and have the ability to communicate their decision effectively to others.

Good decision making is an essential skill for any manager, as it can help streamline operations and improve efficiency.

Workshop 2:
Prepare a report with a presentation in the form of a video on the topic "the practice of applying SWOT analysis in educational systems“
(send on my corporative mail in O365).

you can choose either
a specific educational institution (school, university) or an educational center (child development, foreign language teaching, training programs)

Lecture 5-6

Phenomena of collective decision-making

Process Gains in Group versus Individual Decision Making

One important factor that helps groups to outperform individuals on decision-making tasks is the type of interdependence they have. In general, positively interdependent (cooperative) groups tend to make better decisions than both negatively interdependent (competitive) groups and individuals, particularly in complex tasks (Johnson & Johnson, 2012). These process gains come from a variety of factors. One is that when group members interact, they often generate new ideas and solutions that they would not have arrived at individually (Watson, 1931). Group members are also more likely than individuals to notice and correct mistakes that can harm sound decision making (Ziller, 1957). They additionally have better collective memory, meaning that many minds hold more relevant information than one, and superior transactive memory, which occurs when interactions between group members facilitate the recall of important material (Forsyth, 2010). Also, when individual group members share information that is unique to them, they increase the total amount of data that the group can then draw on when making sound decisions (Johnson & Johnson, 2012). Given these obvious advantages, are there ever times when groups might make less optimal decisions than individuals? If you have ever sat in a group where, with hindsight, a fairly foolhardy decision was reached, then you probably already have your own answer to that question. The more interesting question then becomes why are many heads sometimes worse than one? Let's explore some of the most dramatic reasons.

Process Losses Due to Group Conformity Pressures: Groupthink

Groups can make effective decisions only when they are able to make use of the advantages outlined above that come with group membership. However, these conditions are not always met in real groups. As we saw in the chapter opener, one example of a group process that can lead to very poor group decisions is groupthink. **Groupthink** occurs *when a group that is made up of members who may actually be very competent and thus quite capable of making excellent decisions nevertheless ends up making a poor one as a result of a flawed group process and strong conformity pressures* (Baron, 2005; Janis, 2007).

Groupthink is more likely to occur in groups in which the members are feeling strong social identity—for instance, when there is a powerful and directive leader who creates a positive group feeling, and in times of stress and crisis when the group needs to rise to the occasion and make an important decision. The problem is that groups suffering from groupthink become unwilling to seek out or discuss discrepant or unsettling information about the topic at hand, and the group members do not express contradictory opinions. Because the group members are afraid to express ideas that contradict those of the leader or to bring in outsiders who have other information, the group is prevented from making a fully informed decision. Figure 10.9, "Antecedents and Outcomes of Groupthink," summarizes the basic causes and outcomes of groupthink.

Figure 10.9 Antecedents and Outcomes of Groupthink. [Image description]

Although at least some scholars are skeptical of the importance of groupthink in real group decisions (Kramer, 1998), many others have suggested that groupthink was involved in a number of well-known and important, but very poor, decisions made by government and business groups. Key historical decisions analyzed in terms of groupthink include the decision to invade Iraq made by President George Bush and his advisors, with the support of other national governments, including those from the United Kingdom, Spain, Italy, South Korea, Japan, Singapore, and Australia; the decision of President John F. Kennedy and his advisors to commit U.S. forces to help with an invasion of Cuba, with the goal of overthrowing Fidel Castro in 1962; and the policy of appeasement of Nazi Germany pursued by many European leaders in 1930s, in the lead-up to World War II. Groupthink has also been applied to some less well-known, but also important, domains of decision making, including pack journalism (Matusitz, & Breen, 2012). Intriguingly, groupthink has even been used to try to account for perceived anti-right-wing political biases of social psychologists (Redding, 2012).

Careful analyses of the decision-making process in the historical cases outlined above have documented the role of conformity pressures. In fact, the group process often seems to be arranged to maximize the amount of conformity rather than to foster free and open discussion. In the meetings of the Bay of Pigs advisory committee, for instance, President Kennedy sometimes demanded that the group members give a voice vote regarding their individual opinions before the group actually discussed the pros and cons of a new idea. The result of these conformity pressures is a general unwillingness to express ideas that do not match the group norm.

The pressures for conformity also lead to the situation in which only a few of the group members are actually involved in conversation, whereas the others do not express any opinions. Because little or no dissent is expressed in the group, the group members come to believe that they are in complete agreement. In some cases, the leader may even select individuals (known as **mindguards**) *whose job it is to help quash dissent and to increase conformity to the leader's opinions*.

An outcome of the high levels of conformity found in these groups is that the group begins to see itself as extremely valuable and important, highly capable of making high-quality decisions, and invulnerable. In short, the group members develop extremely high levels of conformity and social identity. Although this social identity may have some positive outcomes in terms of a commitment to work toward group goals (and it certainly makes the group members feel good about themselves), it also tends to result in illusions of invulnerability, leading the group members to feel that they are superior and that they do not need to seek outside information. Such a situation is often conducive to poor decision making, which can result in tragic consequences.

Interestingly, the composition of the group itself can affect the likelihood of groupthink occurring. More diverse groups, for instance, can help to ensure that a wider range of views are available to the group in making their decision, which can reduce the risk of groupthink. Thinking back to our case study, the more homogeneous the group are in terms of internal characteristics such as beliefs, and external characteristics such as gender, the more at risk of groupthink they may become (Kroon, Van Kreveld, & Rabbie, 1992). Perhaps, then, mixed gender corporate boards are more successful partly because they are better able to avoid the dangerous phenomenon of groupthink.

Cognitive Process Losses: Lack of Information Sharing

Although group discussion generally improves the quality of a group's decisions, this will only be true if the group discusses the information that is most useful to the decision that needs to be made. One difficulty is that groups tend to discuss some types of information more than others. In addition to the pressures to focus on information that comes from leaders and that is consistent with group norms, discussion is influenced by the way the relevant information is originally shared among the group members. The problem is that *group members tend to discuss information that they all have access to while ignoring equally important information that is available to only a few of the members*, a tendency known as the **shared information bias** (Faulmüller, Kerschreiter, Mojzisch, & Schulz-Hardt, 2010; Reimer, Reimer, & Czienskowski (2010).

Cognitive Process Losses: Ineffective Brainstorming

One technique that is frequently used to produce creative decisions in working groups is known as brainstorming. The technique was first developed by Osborn (1953) in an attempt to increase the effectiveness of group sessions at his advertising agency. Osborn had the idea that people might be able to effectively use their brains to "storm" a problem by sharing ideas with each other in groups. Osborn felt that creative solutions would be increased when the group members generated a lot of ideas and when judgments about the quality of those ideas were initially deferred and only later evaluated. Thus brainstorming was based on the following rules:

- Each group member was to create as many ideas as possible, no matter how silly, unimportant, or unworkable they were thought to be.
- As many ideas as possible were to be generated by the group.
- No one was allowed to offer opinions about the quality of an idea (even one's own).
- The group members were encouraged and expected to modify and expand upon other's ideas.

Researchers have devoted considerable effort to testing the effectiveness of brainstorming, and yet, despite the creativeness of the idea itself, there is very little evidence to suggest that it works (Diehl & Stroebe, 1987, 1991; Stroebe & Diehl, 1994). In fact, virtually all individual studies, as well as meta-analyses of those studies, find that regardless of the exact instructions given to a group, brainstorming groups do not generate as many ideas as one would expect, and the ideas that they do generate are usually of lesser quality than those generated by an equal number of individuals working alone who then share their results. Thus brainstorming represents still another example of a case in which, despite the expectation of a process gain by the group, a process loss is instead observed.

A number of explanations have been proposed for the failure of brainstorming to be effective, and many of these have been found to be important. One obvious problem is social loafing by the group members, and at least some research suggests that this does cause part of the problem. For instance, Paulus and Dzindolet (1993) found that social loafing in brainstorming groups occurred in part because individuals perceived that the other group members were not working very hard, and they matched they own behavior to this perceived norm. To test the role of social loafing more directly, Diehl and Stroebe (1987) compared face-to-face brainstorming groups with equal numbers of individuals who worked alone; they found that face-to-face brainstorming groups generated fewer and less creative solutions than did an equal number of equivalent individuals working by themselves. However, for some of the face-to-face groups, the researchers set up a television camera to record the contributions of each of the participants in order to make individual contributions to the discussion identifiable. Being identifiable reduced social loafing and increased the productivity of the individuals in the face-to-face groups; but the face-to-face groups still did not perform as well as the individuals.

Even though individuals in brainstorming groups are told that no evaluation of the quality of the ideas is to be made, and thus that all ideas are good ones, individuals might nevertheless be unwilling to state some of their ideas in brainstorming groups because they are afraid that they will be negatively evaluated by the other group members. When individuals are told that other group members are more knowledgeable than they are, they reduce their own contributions (Collaros & Anderson, 1969), and when they are convinced that they themselves are experts, their contributions increase (Diehl & Stroebe, 1987).

Although social loafing and evaluation apprehension seem to cause some of the problem, the most important difficulty that reduces the effectiveness of brainstorming in face-to-face groups is that being with others in a group hinders opportunities for idea production and expression. In a group, *only one person can speak at a time, and this can cause people to forget their ideas because they are listening to others, or to miss what others are saying because they are thinking of their own ideas*, a problem known as **production blocking**. Considered another way, production blocking occurs because although individuals working alone can spend the entire available time generating ideas, participants in face-to-face groups must perform other tasks as well, and this reduces their creativity.

Diehl and Stroebe (1987) demonstrated the importance of production blocking in another experiment that compared individuals with groups. In this experiment, rather than changing things in the real group, they created production blocking in the individual conditions through a turn-taking procedure, such that the individuals, who were working in individual cubicles, had to express their ideas verbally into a microphone, but they were only able to speak when none of the other individuals was speaking. Having to coordinate in this way decreased the performance of individuals such that they were no longer better than the face-to-face groups.

Follow-up research (Diehl & Stroebe, 1991) showed that the main factor responsible for productivity loss in face-to-face brainstorming groups is that the group members are not able to make good use of the time they are forced to spend waiting for others. While they are waiting, they tend to forget their ideas because they must concentrate on negotiating when it is going to be their turn to speak. In fact, even when the researchers gave the face-to-face groups extra time to perform the task (to make up for having to wait for others), they still did not reach the level of productivity of the individuals. Thus the necessity of monitoring the behavior of others and the delay that is involved in waiting to be able to express one's ideas reduce the ability to think creatively (Gallupe, Cooper, Grise, & Bastianutti, 1994).

Although brainstorming is a classic example of a group process loss, there are ways to make it more effective. One variation on the brainstorming idea is known as the *nominal group technique* (Delbecq, Van de Ven, & Gustafson, 1975). The nominal group technique capitalizes on the use of individual sessions to generate initial ideas, followed by face-to-face group meetings to discuss and build on them. In this approach, participants first work alone to generate and write down their ideas before the group discussion starts, and the group then records the ideas that are generated. In addition, a round-robin procedure is used to make sure that each individual has a chance to communicate his or her ideas. Other similar approaches include the Delphi technique (Clayton, 1997; Hornsby, Smith, & Gupta, 1994) and Synectics (Stein, 1978).

Contemporary advances in technology have created the ability for individuals to work together on creativity tasks via computer. These computer systems, generally known as *group support systems,* are used in many businesses and other organizations. One use involves brainstorming on creativity tasks. Each individual in the group works at his or her own computer on the problem. As he or she writes suggestions or ideas, they are passed to the other group members via the computer network, so that each individual can see the suggestions of all the group members, including their own.

A number of research programs have found that electronic brainstorming is more effective than face-to-face brainstorming (Dennis & Valacich, 1993; Gallupe, Cooper, Grise, & Bastianutti, 1994; Siau, 1995), in large part because it reduces the production blocking that occurs in face-to-face groups. Groups that work together virtually rather than face-to-face have also been found to be more likely to share unique information (Mesmer-Magnus, DeChurch, Jimenez-Rodriguez, Wildman, & Schuffler, 2011). Each individual has the comments of all the other group members handy and can read them when it is convenient. The individual can alternate between reading the comments of others and writing his or her own comments and therefore is not required to wait to express his or her ideas. In addition, electronic brainstorming can be effective because it reduces evaluation apprehension, particularly when the participants' contributions are anonymous (Connolly, Routhieaux, & Schneider, 1993; Valacich, Jessup, Dennis, & Nunamaker, 1992).

In summary, the most important conclusion to be drawn from the literature on brainstorming is that the technique is less effective than expected because group members are required to do other things in addition to being creative. However, this does not necessarily mean that brainstorming is not useful overall, and modifications of the original brainstorming procedures have been found to be quite effective in producing creative thinking in groups. Techniques that make use of initial individual thought, which is later followed by group discussion, represent the best approaches to brainstorming and group creativity. When you are in a group that needs to make a decision, you can make use of this knowledge. Ask the group members to spend some time thinking about and writing down their own ideas before the group begins its discussion.

Workshop 3-5: in groups of 2 students prepare a presentation on the following topics:

1. The effect of polarization.
2. The phenomenon of "group-think".
3. The effect of "social facilitation".
4. The effect of "social laziness".
5. The phenomenon of "learned dissonance".
6. The effects of "volume" and "composition" of the decision-making group.
7. The effect of "asymmetry of decision quality".

the presentation should contain a theory on the chosen topic and an example from the student's own experience on the topic of the report

Lecture 7-8

The problem of procrastination and self-control (procrastination) in decision-making

1. Interventions to reduce academic procrastination: a systematic review

In the teaching-learning process, many variables affect the correct development of students. Students experience problems in the academic sphere when they feel that acquiring knowledge is difficult. One of these problems present in students is academic procrastination. According to the study by Amarnath, Ozmen, Struijs, de Wit and Cuijpers (2023), it is estimated that 20% of adults perceive themselves as chronic procrastinators, a percentage that increases and reaches figures of 70% in university students (Klingsieck, Grund, Schmid & Fries, 2013), so it is a widespread phenomenon that can act at both academic and well-being levels, affecting effective learning processes and the development of states of anxiety or depression (Amarnath et al., 2023; Beutel et al., 2016).

According to Steel (2007), procrastination is the action of postponing one or several activities, both in their beginning and their development or completion, carrying out other activities of lesser importance, or even unnecessary ones, that prevent their timely completion. Other authors define procrastination as the process of not being able to complete a specific task on time or feeling unable to finish it in a favorable manner, which causes the subject to experience a feeling of discomfort and a tendency to feel overwhelmed (Palacios-Garay, Belito, Bernaola & Capcha, 2020). Similarly, authors such as Delgado, Raúl and Palos (2007) define procrastination as a synonym for procrastination, which is understood as an intentional decision that leads to postponing a task unnecessarily and leaving it incomplete, replacing it with another activity of minimum priority, knowing the negative consequences or possible disadvantages associated with this behavior.

In education, academic procrastination is an impairment in decision-making and in resolving conflicts that arise for students when deciding whether to satisfy the requirements of the environment or to complete academic homework (Ayala, Rodríguez, Villanueva, Hernández & Campos, 2020). This idea is associated with anxiety problems in students both at the beginning of the task and as a consequence of the decisions made or linked to poor time allocation (Marquina-Luján, Gomez-Vargas, Salas-Herrera, Santibañez-Gihua & Rumiche-Prieto, 2016). Other authors define academic procrastination as the unnecessary postponement of study-related activities such as doing homework, reading texts, or studying for exams due to the lack or absence of self-regulated performance and the behavioral tendency to postpone what is necessary to achieve a goal (Geara & Teixeira, 2017; Knaus, 2000).

As with definitions, the factors associated with procrastination depend on different approaches and authors, so the phenomenon of procrastination has often been associated with failure in the process of self-regulation (Correia & Moura, 2017; Geara & Teixeira, 2017; Steel & Klingsieck, 2016). However, other authors not only focus on procrastination as a problem linked to time management by students but also address it by including cognitive, affective, or behavioral aspects such as overconfidence in carrying out or achieving a proposed goal on time or self-efficacy behaviors (Alegre, 2013; Moreta, Durán & Villegas, 2018;Vargas, 2017). We can also find it associated with strategies for regulating negative emotions, such as fear of failure, as essential and difficult activities are postponed for others that present an immediate reward, thus achieving a temporary sense of well-being (Hen & Goroshit, 2020; Wang, Kou, Du, Wang & Xu, 2022).

In education, several studies negatively associate procrastination with academic performance, causing deficiencies in the educational process (Badia Martín, del & Daura Luján, 2018; Hussain & Sultan, 2010; Kim & Seo, 2015). According to Ayala et al. (2020), students are highly predisposed to procrastinating on some academic tasks, causing them not to submit their homework on time or not to comply with the time estimated or set by teachers. Procrastination of activities, in many cases, produces states of anxiety, low self-efficacy, and stress that, as a consequence, will result in a negative mark or grade and may even lead to cases of school failure, linked to the feeling of inefficiency or discomfort for not being able to achieve the proposed goals (Domínguez, Villegas & Centeno, 2014).

Just as there are differences in construct definitions, procrastinators' styles are not unique. While they exhibit common behaviors, there are typified differences in the literature. Chu and Choi (2005) classify procrastinators into two types: active and passive. Active procrastinators are those individuals who view procrastination as a positive thing, preferring to work under pressure and making deliberate decision to procrastinate. In contrast, passive procrastinators, the most frequent procrastinators, are indecisive and unable to make decisions quickly, and, despite not intending to postpone activities, they are paralyzed by their decision to act and usually do not finish the proposed tasks on time.

On the other hand, authors such as Ferrari, Johnson and McCown (1995), based on a psychological approach, divide procrastination into three groups: aural, avoidant, and decisional. Aurosal procrastination refers to a high level of sensation seeking, feeling greater satisfaction in completing the task quickly, and running the risk of failure. The avoidant procrastinator procrastinates for fear of failure, is afraid of facing his or her limitations, and therefore avoids performing the task. Finally, the decisional, procrastinates in deciding to carry out the activity to be performed. Similarly, Steel (2007) classifies four types of procrastinators by associating them with motivational factors in procrastination: Thrill Seekers who enjoy finishing tasks just in time, Impulsives are individuals who lack discipline and are easily distracted, Undecided have difficulty in making decisions and stagnate and Avoiders are afraid of failure or the disapproval of others.

Procrastination is, therefore, a multifaceted construct about which there are different studies that are addressed from different psychological and pedagogical approaches, and each of them provides a differential vision or focuses on different aspects of the construct. This phenomenon is only sometimes positive; sometimes, there is an excess of literature or a lack of specificity when finding the information required when studying the phenomenon. For this reason, it seems necessary to systematize and bring together the scientific production of recent years on academic procrastination to organize the information and facilitate the understanding of the construct related to educational contexts.

Most research considers procrastination a stable personality trait, but internal and external conditions can trigger or mediate students' behavior (Steel & Klingsieck, 2016). This idea highlights the importance of not only focusing on students' intrinsic or personal aspects but also using external factors that can help us manage these behaviors. In academic contexts, students must master different learning strategies that allow them to evaluate their study process and be aware of their limitations and achievements (Martins & Santos, 2019). For this, it is necessary to work on self-regulation processes, where the individual, consciously and voluntarily, manages their behaviors, feelings, and thoughts to achieve the proposed goals (Bandura, 1991; Machado & Schwartz, 2018), since, as many authors mention, procrastination, as a failure in the self-regulation process, implies an intention-action mismatch that increases the probability of experiencing unpleasant emotional states such as anxiety before evaluative activities, stress, exhaustion, decreased interest in the activities, among other aversive feelings (Lonka et al., 2014; Pereira & Ramos, 2021).

Based on the above, recent studies focus on intervening students by providing them with tools that enable them to cope with the procrastinating behavior of students, trying to mitigate its adverse effects. Some of the work in this line focuses on the cognitive aspects of procrastination, such as acceptance and control of thoughts and emotions, based on cognitive behavioral therapies (CBT) (Rozental et al., 2018; Ugwuanyi et al., 2020; Wang et al., 2017) or interventions based on acceptance and commitment therapy (ACT) (Gagnon, Dionne, Raymond & Grégoire, 2019; Glick & Orsillo, 2015; Scent & Boes, 2014). Other authors focus their interventions on aspects that relate to students' self-esteem (Schuenemann, Scherenberg, von Salisch & Eckert, 2022; Toker & Avcı, 2015) or self-efficacy (Çelik & Odacı, 2018; Krispenz, Gort, Schültke & Dickhäuser, 2019).

Other studies focus on critical aspects of self-regulation in a more practical way, such as the effectiveness of time management through group counseling (Häfner, Oberst & Stock, 2014; Ja'afari, Refahi & Kazemi, 2017) or emotion management (Amarnath et al., 2023; Eckert, Ebert, Lehr, Sieland & Berking, 2018; Loeffler, Stumpp, Grund, Limberger & Ebner-Priemer, 2019). Similarly, we found other interventions that study the relationship between procrastination in students with their performance (Balderas, Capiluppi, Palomo-Duarte, Malizia & Dodero, 2019; Davis & Abbitt, 2013). These studies focus on one or more parts of the construct. However, as is the case when defining procrastination, they are carried out from different approaches or perspectives, which means that the results are not entirely clear. There is no theoretical corpus or model that allows for the evaluation of these interventions.

Bearing in mind the above, this study aims to analyze the educational interventions linked to procrastination that have been carried out over the last decade, identify how procrastination is being addressed in educational contexts, and assess the results obtained. Furthermore, these data can provide a deeper insight into the construct and explore those aspects of procrastination that are promoted in the literature and those that are being addressed in practice.

The results of this study could allow both teachers and counselors to maximize efforts and to be able to detect and evaluate the problems present in the classroom. Likewise, these data are intended to help evaluate or predict the pedagogical potential of existing interventions. They can also be used as a theoretical corpus to improve the design and impact of future interventions focused on those aspects of procrastination that need to be improved.

2. Methodology

The primary purpose of this review is to identify which dimensions of procrastination are being addressed in the classroom. To this end, a systematic review of educational interventions of the last decade aimed at reducing the degree of procrastination of students is carried out.

This general objective is specified in the following specific objectives:

1) Systematize the scientific production regarding academic procrastination through the study of interventions focused on its reduction, tracing its evolution in the last decade and identifying its main characteristics.
2) Extract a system of dimensions from the analyzed procrastination models that can be used t evaluate educational interventions for reducing procrastination.
3) Identify the dimensions of procrastination that are being worked on in practice through educational interventions focused on reducing procrastination.
4) Reflect on the interventions as an agent for improving the levels of procrastination present in students, their appropriateness, and correct understanding and implementation in educational contexts.

2.1. Procedure, materials, and data analysis

The scientific methodology followed is carried out in three stages. In the first stage, a review of the most representative models of academic procrastination in the scientific literature was carried out to extract the dimensions to which procrastination relates in educational contexts. In the second stage, a systematic review of the existing literature on educational interventions for reducing academic procrastination is carried out. This systematic review is carried out following the PRISMA protocol. In the third phase, a qualitative analysis of the selected studies is carried out to identify which academic procrastination dimensions are being addressed in educational contexts. For this last phase, according to Hsieh and Shannon (2005), the methodological procedure is applied: directed content analysis. This method consists of categorizing the selected studies based on a previous categorization, model, or approach, as long as these are duly justified and validated for their scientific rigor. For this third stage, the categories extracted from the first step of the study have been used as a system of categories. Each of these procedures is detailed below.

Phase 1. Literature review of relevant procrastination models

To carry out the study's first phase, a literature review was conducted using the combination of the terms 'procrastination' and 'academic procrastination' in Scopus and WOS. The existing models in the literature from the last ten years were reviewed. For their selection, we followed the criteria of the highest number of citations and most relevant citations and that the models were directly related to academic procrastination. For the final selection, 72 articles were analyzed, grouping their dimensions and selecting those most recurrent and present in the models. The emerging dimensions were grouped into three categories: psychological, personal, and pedagogical. The following table (Table 1) shows the emerging dimensions.

Phase 2. PRISMA Protocol

To develop this study, a systematic review of the existing scientific literature on interventions developed to reduce academic procrastination was carried out. In order to carry out this review correctly and to ensure its validity and thoroughness, the recommendations and indications of the PRISMA statement were followed (Hutton, Catalá-López & Moher, 2016; Moher, Liberati, Tetzlaff & Altman, 2009; Urrútia & Bonfill, 2013). The process followed in carrying out the review is detailed below, explaining the different phases of the protocol.

Table 1
Most cited dimensions extracted from the literature. Source: authors.

Approach	Dimensions
Psychologic	Self-regulation
	Self-efficacy
	Self-esteem
	Motivation
	Perfectionism
	Personality
	anxiety
Personal	Authoritarian parenting
Pedagogic	Academic performance
	Student dropout

2.2. *Initial search*

The initial search began in February 2023 using the combination of the terms 'procrastination' and 'academic procrastination' in the WOS and Scopus databases. In a second phase, the search was expanded using the Boolean operators AND and OR in combination with the descriptors 'model', 'education', 'student', 'academic', and other descriptors. These searches showed an extensive amount of scientific productions, and thanks to this initial phase, it was possible to obtain a global vision of the subject matter, of the existing models in the literature of academic procrastination, and, therefore, of the relevance of carrying out a systematic review of the literature focused on the interventions that have been carried out in recent years in the classroom, intending to reduce the data on academic procrastination.

The following is a description of the dimensions that make up the categorization or preliminary approach used for the targeted content analysis extracted from the review carried out in Phase 1 of the study. As described above, this categorization is made up of those dimensions that are most present in the most relevant models of procrastination in the scientific literature. For our study, psychological variables have been used due to the nature of the construct and because these dimensions are measurable and assessable through the interventions studied.

The selected categories and their description are presented below:

1) Self-efficacy: personal perception or belief of one's own capabilities in a given situation.
2) Motivation: a set of internal or external factors that partly determine a person's actions.
3) Personality: a set of a person's psychological characteristics that determine the way he/she acts in particular circumstances.
4) Self-regulation: the ability to control and manage thoughts, emotions, actions, and motivation through a series of personal strategies that enable both the achievement of goals and the avoidance of undesirable outcomes.
5) Perfectionism: a personality trait that is related to the belief that it is necessary to do things extremely well, without making mistakes, and that decisions must be made that do not lead to any kind of mistake or loss.
6) Anxiety: a state of mind characterized by great restlessness, intense excitement, and extreme insecurity.

3.3. Self-regulation

Following the analysis of interventions, different studies focus on self-regulation. These studies are approached from different approaches and focus on different subcategories. Within these subcategories, the one that is extracted in the most significant number of interventions analyzed is time management, as in study A05 in which in the sixth session, aspects such as functional use of time, learning time management strategies, practical use of plans and strategies for a day and understand the importance of determining goals are worked on, or in the seventh session, which deals with aspects such as efficient use of time in everyday and academic life and the implementation of plans for efficient use of time. Another example of a study working on time management is A08, in which, through active reflection, students are made to reflect on their time management behavior and how it affects their performance. They also use planning sheets or timetables to encourage students to set small intermediate deadlines and reflect periodically on their progress with these tasks.

Another of the most frequently cited aspects of self-regulation is the management of emotions (Emotion regulation). In study A11 in module 5: Being willing to deal with discomfort, participants are encouraged to be aware of the discomfort they may encounter during tasks. In A07, in its third session, subjects learned to overcome affective obstacles that created gaps between their intentions and behaviors. They worked on emotions to reduce procrastination by tolerating and modifying aversive emotions.

Closely linked to the management of emotions is Thoughts regulation, which is worked on in the interventions to deal with intrusive thoughts that attack procrastinators, as in A28, where they try to help students to become aware of possible false automatic thoughts that may appear during exams or other activities and to develop and implement alternative thoughts. In A29, they discussed in their third session the power of ideals, and the difference between limiting and helping thoughts, in which they worked with guided reflection on their ideals about their studies and how awareness of these ideals could be helpful during study activities. Participants discovered which helpful thoughts they had in successful study situations and which limiting thoughts played a role in situations of academic procrastination.

In study A21's training session, students learned about self-regulation through goal setting using the SMART method (Specific, Measurable, Achievable, Realistic, and Time-based) goals or in A17, where goal-setting techniques are included in tutorials, as the authors consider it an essential part of overcoming procrastination and also having beneficial effects on motivation and performance.

Finally, self-regulation includes self-control, which the authors of study A24 focus on through a self-instruction procedure designed to improve self-control independently, using verbal affirmations to encourage and guide. In the case of A13, self-control focused on distractions and temptations. First, trainers started by defining and distinguishing social temptations (e.g., requests from friends to meet spontaneously) and cognitive distractions (e.g., irrational thoughts, dysfunctional mood) and introduced the strategy of self-instructions labeled as if-then clauses. After working through examples with the students, they reflect on the most challenging situations that could lead to academic procrastination in the future and generate the most useful self-management strategies to cope with these situations.

3.4. Self-efficacy

Self-efficacy is the second most cited dimension in the articles analyzed. In study A05, they encourage in their sessions the use of strategies to complete academic tasks and the awareness of positive and negative aspects to enhance the positive ones and thus increase the belief in self-efficacy. In the case of A07, during one of their sessions, named the evaluative session, they promoted self-efficacy expectations as a significant negative predictor of procrastination. To do so, participants evaluated situations where they successfully reduced their procrastination, thus increasing their self-efficacy expectations as a reinforcing author to reduce procrastination in future situations. In addition to generically working on self-efficacy, subcategories are extracted from the study that are explored in depth from different approaches, as is the case of A32, in which metacognition is worked on. This study uses an intervention that works with a combination of regular progress reports and open-ended questions aimed at reflecting on the expectation and value of the task in order to mitigate sensitivity to delay and thus promote students' metacognition.

Two of these subcategories, problem-solving and decision-making, are mentioned in study A19, along with other dimensions of the study also associated with time management, since in their sessions, instead of trying to increase the time participants spent on solving procrastinated tasks, they restricted the time they could work on it.

In the case of self-assessment, as a measure of self-efficacy, in A22 in the study interventions, modules were included to support the different phases of lifelong learning, such as planning, goal setting, self-monitoring, and self-assessment.

3.5. Self-esteem

Another dimension of the study that emerges from the interventions analyzed is self-esteem, as in the case of the work described in A28, where students are helped to gain awareness of false attributions of failure (academic self-esteem beliefs). They also help students to develop self-confidence, realize the habits that prevent lifelong learning, and help them to understand the reasons for success rather than failure. All of this helps students understand the significant long-term impact that avoiding challenging academic tasks can have on their self-esteem. All of this helps students understand the significant long-term impact that avoiding challenging academic tasks can have on their self-esteem. In study A30, the intervention showed promising effects concerning self-esteem, as it could teach individuals not to avoid experiences, to be congruent with their values, and to commit and take action, as well as correct irrational beliefs, reducing self-devaluation thinking and help individuals to overcome the fear of failure. Other studies mention this dimension by focusing on fear or self-doubt, such as in A17, which explains how some procrastinators tend to use procrastination as a defensive ego strategy to excuse themselves for not having completed a task satisfactorily, suffering from fear of failure, self-doubt, low self-esteem and vulnerability to specific irrational beliefs. They offer various intervention programs to help individuals address irrational and negative thought patterns through questioning and rethinking strategies.

3.6. Motivation

Motivation is present in several studies, such as A23, where the treatment content was based on research on procrastination and interventions, including goal-setting techniques, motivation, and behavioral activation. Study A03 focuses on arousing students' motivation by introducing technologies to help reduce procrastination. One way to stimulate student motivation is novelty. In this case, augmented reality is used to stimulate learning. To this end, they establish various motivational strategies linked to emotional, affective, cognitive, and behavioral components.

3.7. *Personality*

Another of the dimensions found in the review carried out is personality, as in the case of A23, in which they allude to perfectionism as a fundamental trait of procrastinators, working in their sessions on the beliefs and ideas associated with procrastination,

Table 5
Emerging categories and subcategories of the study. Source: authors.

	Subcategories
Self-regulation	Emotion regulation
	Time management
	Goal setting
	Thoughts regulation
	Self-control
Self-efficacy	Metacognition
	Problem solving
	Decision making
	Self-evaluation
Self-esteem	Fear/self-doubt
Motivation	–
Personality	Locus of control Perfeccionism
Anxiety	–

perfectionism, self-criticism, and fear as underlying causes of procrastination and the thoughts associated with procrastination focused on overcoming the inner child. Study A19 refers to the locus of control, a personality variable fundamental to students' behavior. During the sessions, we focus on enhancing the internal locus of control.

3.8. Anxiety

Finally, looking at anxiety, study A16 works on interventions to reduce both procrastination and anxiety, focusing, in this case, on test anxiety. This study investigates the relationship between both with self-efficacy, finding in its results a stable decrease in participants' test anxiety due in part to the increase in self-efficacy and a lasting decrease in academic procrastination.

As a summary, the categories and subcategories described above are presented in Table 5.

Table 3
Main characteristics of the publications included in the qualitative synthesis. Source: authors.

ID	Authors (Year)	Sample	Methodology
A01	Amarnath et al. (2023)	176	Quantitative
A02	Balderas et al. (2019)	185 / 166	Quantitative
A03	Bendicho, Mora, Añorbe-Díaz and Rivero-Rodríguez (2017)	134 (2014) / 153 (2015)	Quantitative
A04	Blouin-Hudon and Pychyl (2017)	193	Quantitative
A05	Çelik and Odacı (2018)	36	Quantitative
A06	Davis and Abbitt (2013)	3	Mixed
A07	Eckert et al. (2018)	161	Quantitative
A08	Edwards, Martin and Shaffer (2015)	353	Quantitative
A09	Fathi, Azar, Mirnasab and Gargari (2015)	36	Quantitative
A10	Gading (2020)	61	Quantitative
A11	Gagnon et al. (2019)	36	Quantitative
A12	Glick and Orsillo (2015)	118	Quantitative
A13	Grunschel, Patrzek, Klingsieck and Fries (2018)	106	Quantitative
A14	Häfner et al. (2014)	96	Quantitative
A15	Ja'afari et al. (2017)	30	Quantitative
A16	Krispenz et al. (2019)	71	Quantitative
A17	Loeffler et al. (2019)	89	Quantitative
A18	Lukas and Berking (2018)	31	Quantitative
A19	Otermin-Cristeta and Hautzinger (2018)	175	Quantitative
A20	Ozer, Demir and Ferrari (2013)	10	Quantitative
A21	Patria and Laili (2021)	20	Quantitative
A22	Pogorskiy and Beckmann (2023)	157	Quantitative
A23	Rozental et al. (2018)	92	Quantitative
A24	Saputra and Lidyawati (2019)	14	Quantitative
A25	Scent and Boes (2014)	8	Qualitative
A26	Schuenemann et al. (2022)	148	Quantitative
A27	Toker and Avcı (2015)	26	Mixed
A28	Ugwuanyi et al. (2020)	64	Quantitative
A29	Visser, Schoonenboom and Korthagen (2017)	54	Quantitative
A30	Wang et al. (2017)	60	Mixed
A31	Wang, Xin, Zhang, Du and Wang (2022)	818	Quantitative
A32	Wessel, Bradley and Hood (2021)	107	Quantitative

Table 4
Main dimensions, frequency, percentages of appearance and articles. Source: authors.

Dimensions	Description	n	%	Articles
Self-regulation	Ability to control and manage thoughts, emotions and actions through a series of personal strategies that allow the achievement of objectives and the avoidance of undesired results.	29	90,6%	A01, A02, A03, A05, A06, A07, A08, A09, A10, A11, A12, A13, A14, A15, A17, A18, A19, A20, A21, A22, A23, A24, A25, A26, A27, A28, A29, A30, A32
Self-efficacy	Personal perception or belief of one's own capabilities for a given situation.	9	28,1%	A05, A07, A16, A19, A22, A23, A27, A31, A32
Motivation	A set of internal factors that can determine a person's actions	7	21,8%	A03, A13, A17, A21, A23, A27, A28
Self-esteem	Sets of perceptions, thoughts, evaluations and feelings directed towards oneself.	6	18,7%	A17, A24, A26, A27, A28, A30
Personality	Set of psychic characteristics of a person that determine the way he/she acts under particular circumstances.	2	6,2%	A09, A19
Anxiety	Mental state characterized by great restlessness, intense excitement and extreme insecurity.	1	3,1%	A16

In the last decade, studies have been developed around academic procrastination that attempt to define this complex construct, following the same trend this year. Based on the production per year about the studies of academic interventions, it can be seen that these are being worked on during all the years of the last decade, hence the relevance of carrying out this study, in order to bring together and update how procrastination is being worked on in the classroom.

Based on the models analysed in the study, procrastination is divided into different categories according to the different approaches to the construct. Psychological categories (self-regulation, self-efficacy, self-esteem, motivation, perfectionism, personality and anxiety), pedagogical categories (academic performance and student dropout) and personal categories (authoritarian parenting) are obtained, the most repeated categories being self-efficacy, self-regulation and perfectionism, which belong to the psychological approach.

Workshop 6-8:
write an essay on the topic:
Procrastination in my life.
draw yourself in a state of procrastination
(color drawing)
send it to me on MS Teams private chat

Prepare an analytical review of the article. analyze the main points up to 1 page and express your personal opinion on what you agree with and why

https://www.edusoft.ro/brain/index.php/brain/article/viewFile/1071/1238

send it to
(name of file: YOUR NAME_HW to lecture 7-8)