

MITCA

HOMework IMPLEMENTATION METHOD



VARIED



EVALUATED



SPECIFIC



WEEKLY



WORTHWHILE

MITCA

HOMEWORK IMPLEMENTATION METHOD



UNIVERSIDADE DA CORUÑA

This proposal is framed by the research project: ***Quality and equity in setting homework: Design and implementation of plans based on empirical evidence.*** [Programa Estatal de Fomento de la Investigación Científica y Técnica de Excelencia, Subprograma Estatal de Generación del Conocimiento. Convocatoria. 2017. Secretaría de Estado de Investigación, Desarrollo e Innovación (Ministerio de Economía, Industria y Competitividad - MEIC). (Ref.: EDU2017-82984-P)].

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The MITCA method was created with the aim of making homework into an educational resource capable of improving students learning self-regulation and school engagement. More specifically, the method aims for homework:

- to be understood by students as an interesting, worthwhile instrument to help them progress.
- to have a clear aim and be sensitive to student diversity.
- to help students to evaluate themselves and understand their strengths and weaknesses.
- to contribute to improvements in students' planning and time management.

With this aim, we designed a method for setting homework with 5 conditions:

1. In addition to post-topic and pre-topic tasks, similar amounts of revision, organization, and production tasks are set.
2. The tasks are described by the mental work that they involve and the content they cover.
3. The teacher communicates the usefulness, interest, importance, and/or applicability of homework they set.
4. Homework tasks are set weekly and the students establish the timeslots in which to do them.
5. Homework is marked/corrected weekly, in the classroom or individually, indicating weak areas and strengths.

Theoretical basis of the MITCA method

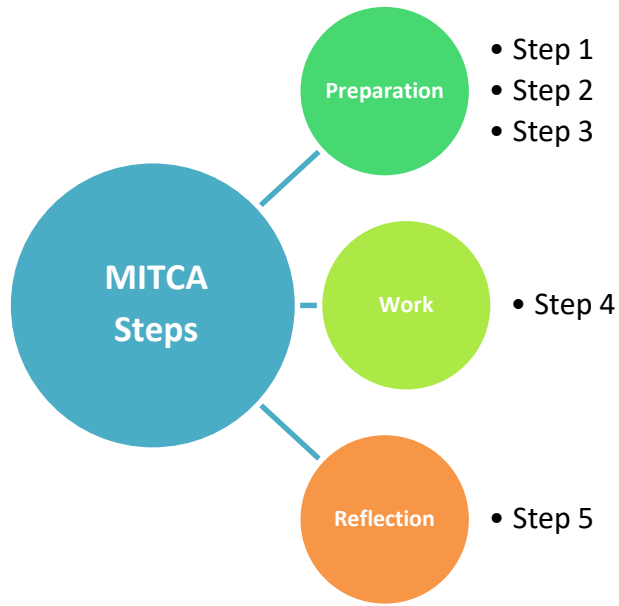
These five conditions for homework in MITCA can be summarized as: Varied, Specific, Worthwhile, Weekly, and Evaluated.

The MITCA method was developed under the conceptual umbrella of self-regulated learning, with the understanding of homework as a learning episode consisting of a *preparation phase*, a *work phase*, and a final *reflection phase*

According to the phasic models of self-regulation, first developed by Zimmerman and colleagues (Schunk & Zimmerman, 1998; Winne & Hadwin, 1998; Zimmerman, 2000), the *preparation phase* includes those processes that precede actually doing the homework tasks; the *work phase* includes the processes related to actually doing the tasks; and the *reflection phase* happens once the homework tasks are completed, directly influencing subsequent cycles or episodes.

Taking these self-regulation models as a reference, the MITCA method is aimed at optimizing the *preparation phase* of the learning by addressing three basic processes: *definition of the task*, *setting objectives*, and *planning the activity*.

The homework tasks the teacher sets are the beginning of the self-regulated learning process, as these are what the students will base their learning objectives on. In this regard, the MITCA method states that homework tasks must be varied (STEP 1), well defined (STEP 2), and be seen as worthwhile by the students (STEP 3).



Doing homework requires the student to maintain their focus and effort in less-structured environments, with less external supervision and social pressure, and without time restrictions, which are all characteristics of typical classroom situations (Cooper et al., 2006; Trautwein & Koller, 2003; Wolters, 2003). Because the *work phase* at home effectively needs better behavioral self-

regulation, STEP 4 of MITCA is aimed at assisting students' *planning and time management*.

Lastly, MITCA aims for *teacher feedback* to become an instrument that facilitates comparison of the results of homework with learning standards set in the classroom, determining whether the objectives have been reached or whether there is still learning to be done. In this regard, STEP 5 of the method proposes weekly self-referred marking/correction of homework, identifying strengths and weaknesses to encourage individual reflection about the operations employed while doing the homework.

This *reflection phase* will help the students to self-assess, checking what they know and what they have yet to master, and able to improve their homework product or revise the starting conditions or standards established if necessary. Through this evaluation, external feedback given

to the student should contribute not only to strengthening retention of information, but also the promotion of more adaptive cognitive and metacognitive strategies and improved self-confidence.

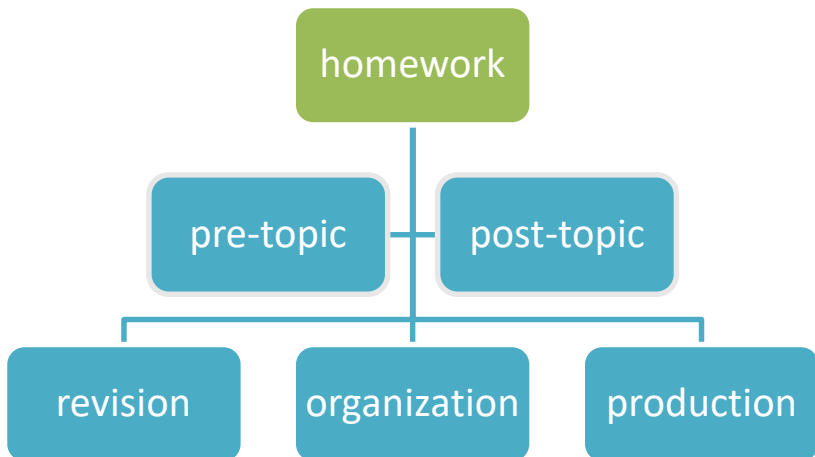
VARIED TASKS

1

Set similar amounts of review, organization, and pre/post-topic production tasks

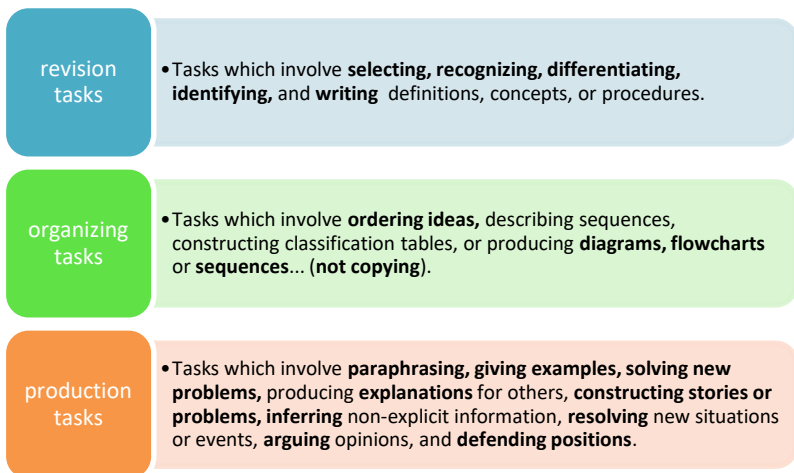
Varied tasks

With the aim of varying the types of tasks set for homework, STEP 1 of the MITCA method prescribes both tasks based on content (post-topic) and tasks preparing for content that has not yet been taught (pre-topic), as well as similar amounts of revision tasks, organizational tasks, and production tasks.



In the context of self-regulated learning models, given that cognitive operations are strategies that facilitate the coding and storage of the material to learn (Weinstein et al., 2011), MITCA has created its own typology of homework tasks in line with that proposed by Mayer (Mayer, 2014 a, 2014b), with SOAR (Kiewra, 2005; Jairam et al., 2014), and the ICAP framework of modes of cognitive engagement developed by Chi (Chi, 2009; Chi & Wylie, 2014).

The MITCA method specifies three types of task depending on the cognitive processes involved, summarized below:



Significant learning is assumed to involve three primary cognitive processes. The learner must (a) select the most important information from what they have been given, (b) organize it in a coherent mental representation, creating significant connections according to the underlying structure of the learning material, and (c) integrate the new constructed representation into the knowledge structures already in memory.

Based on a significant body of empirical research over the last ten years about the impact of cognitive strategies on encouraging significant learning and understanding (for example, see Dunlosky et al., 2013; Fiorella & Mayer 2015; Novak, 2010; Sweller et al., 2011, among others), the assumption underlying MITCA is that homework should encourage more active, constructive, and interactive involvement than happens routinely. So, in pursuit of encouraging active engagement with homework, the method aims for students, while continuing to identify—*e.g., highlight, write, or review literal information*—and organize information—*e.g., differentiate between and order ideas*—, to engage in more constructive—*e.g., paraphrasing*

or writing an opinion— and interactive involvement—e.g., preparing explanations for others or making an argument in public—when they do homework activities. We believe that the MITCA approach simplifies the teachers' work of setting homework and manages to provide the student with a valid platform for implementing cognitive strategies during their learning episodes at home.

SPECIFIC

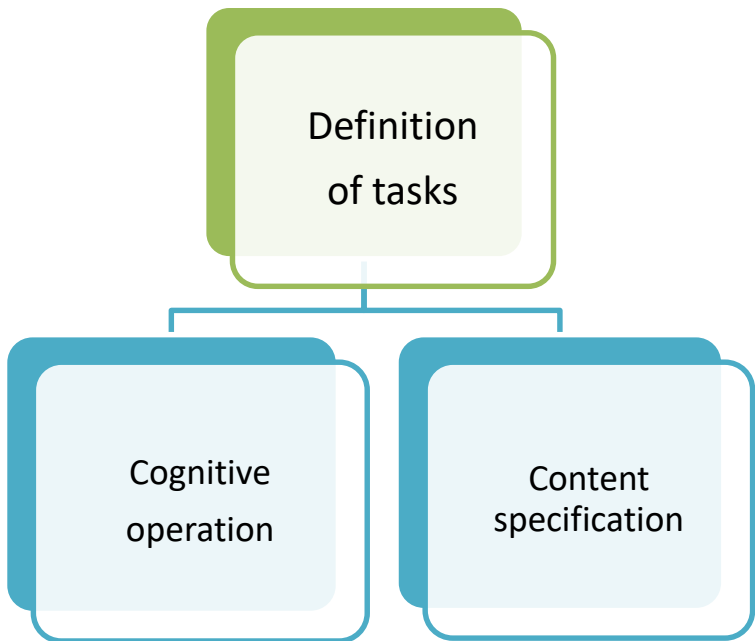
SPECIFIC TASKS

2

Define the tasks that are set

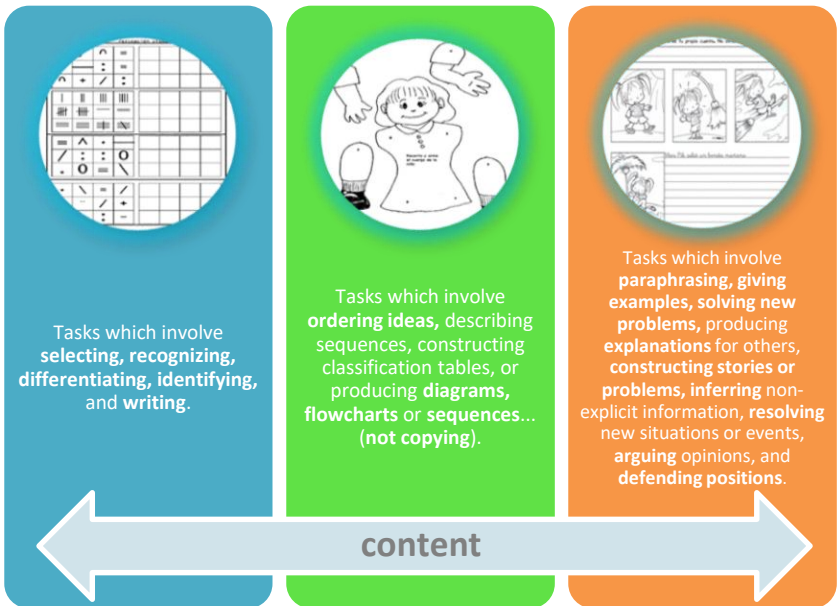
Specific tasks

Based on the TASC conditions developed for setting learning goals by McCardle et al. (2016), STEP 2 of MITCA reminds teachers of the need to define the homework that they set in terms of cognitive operation and content.



In this regard, setting MITCA homework tasks is radically different to normal practice in setting homework. It means going from setting tasks such as: *exercise 2 on page 32 for Spanish and exercise 3 on page 12 for Mathematics* to exercises such as *differentiate between adverbs and adjectives* or *invent a subtraction problem*.

We believe that homework tasks can be easily defined according to the specific actions which are laid down in MITCA when setting the three types of tasks making up STEP 1 of the method.



Specifying tasks in terms of *cognitive activity* focuses the students' attention on the learning process and on the strategies to adopt, potentially having an impact both on preparation and the homework *per se*. This definition of homework tasks articulated in MITCA in order to make the learning process more effective also includes the *specification of the content* to be learned.

In addition to contributing to identifying the mental actions that need to be employed in each learning episode at home (*differentiate between / invent*), clearly establishing the content of the task (*adverbs and adjectives / subtraction problems*) allows the student to focus on the relevant parts of the study material. Setting specific tasks, which the MITCA method encourages, focuses the student's attention on the core of the learning, rather than reducing it to a sequence of activities solely defined by the completion of the task.

WORTHWHILE TASKS

WORTHWHILE

3

Establish the beneficial nature of the tasks that are set

Worthwhile tasks

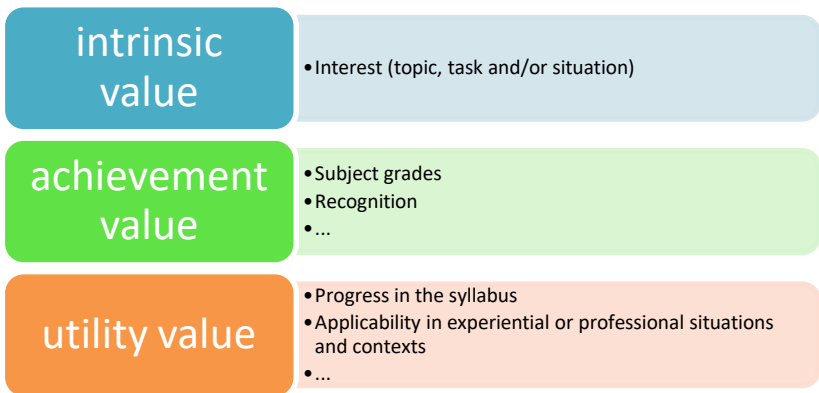
Because the value that students place on homework tasks is absolutely key to their engagement, the MITCA method calls on the teacher to transmit the usefulness, interest, importance, and applicability of the homework that they set (STEP 3).

The task value of homework is a complex construct involving the level of enjoyment it provides, the extent to which it contributes to meeting individual needs and personal fulfilment, and its usefulness in achieving personal short- and long-term goals (Eccles & Wigfield, 2002).

There is little doubt that intrinsic interest in tasks predicts deep processing of information and encourages more self-regulated learning (Hidi & Renninger, 2006). However, giving the tasks some kind of recognition—*e.g., this is the type of task that will be on the exam or that the best will produce in class*—or instrumental value—*e.g., this will be useful for you to be able to get a bargain in the sales or to learn to speak in public*—improves cognitive and emotional

engagement with these tasks (Katz & Assor, 2006; Miller & Brickman, 2004).

Based on this premise, MITCA states that the subjective value attributed the homework tasks set can be improved when expectations are clarified, when they are made to fit, as far as possible, with intrinsic interest, and when the instrumental value is identified.



For this reason, in addition to working with content and setting tasks that are as *interesting* as possible for the students, setting homework should also include explicit information about the achievement value if it is done well and its instrumental *utility*.

WEEKLY TASKS

WEEKLY

4

Make it easy for students to organize the time they spend on homework

Weekly tasks

As noted in the theoretical background to the method, the working phase of homework needs particular capacity for behavioral and volitional self-regulation on the part of the student. More specifically, doing homework tasks at home means student need to be able to organize their environment, plan and manage their time, concentrate their attention, and control their motivation and emotions (Corno, 2004; Xu, 2010; Xu & Corno, 2003). This mix of abilities is usually assumed but rarely taught or examined, and in this context, without being exhaustive, MITCA focuses its intervention efforts specifically on planning and managing time.

Based on the empirical evidence, STEP 4 of the MITCA method is the weekly setting of homework tasks, calling on the teacher to collaborate with the students in establishing their own timeslots to do homework in the first few weeks of implementing the method.

HOMEWORK LIST

1.- Exercises writing with letters and numbers (exercise 2, page 19)

2.- The exercise to find the solution (page 14)

3.- Solve distance problems (page 15)

4.- Exercise of inventing a subtraction problem (exercise 6, page 15)

	MON	TUE	WED	THU	FRI	SAT	SUN
TASK				Exercises writing with letters and numbers (ex. 2, page 19) Solve distance problems (page 15)		Exercise of inventing a subtraction problem (ex. 6, page 15) The exercise to find the solution (page 14)	
WHEN				18h p.m.		12 p.m.	
ESTIMATED TIME				15min.		20min	

The benefits associated with effective time management in education have been the object of attention from various fields and have traditionally been something that has been the work of counselling departments. In fact, the practices associated with poor time management—*not appropriately allocating time to tasks, cramming before exams, and not meeting the deadlines teachers set*—have often been recognized in the literature as a notable source of stress,

usually associated with poor performance (Longman & Atkinson, 2004; Macan et al., 1990).

Specifying objective and committing to dates and times not only increases the number of strategies used to approach the tasks, but also creates opportunities to properly supervise students' progress. In this way, setting plans for episodes of work is a control resource that allows supervision of progress, recognition of difficulties, and increases the possibilities for review (McCardle et al., 2016; Zimmerman, 2008).

EVALUATED TASKS

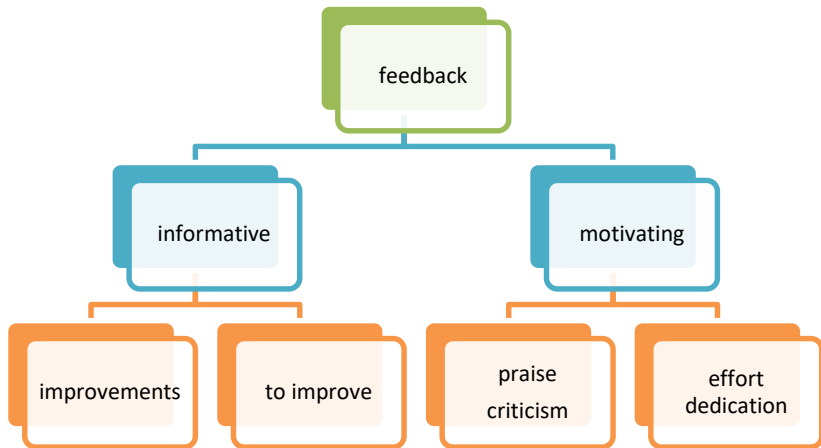
5

Mark all tasks indicating strengths and weaknesses

Evaluated tasks

There are many practices for supervising homework that is set, and they vary depending on the students and the schools—for example, based on students’ prior knowledge of the topic or the number of students in the class. Because of its potential effects on students’ levels of effort and engagement (Cunha et al., 2018; Elawar & Corno, 1985; Núñez et al., 2015), STEP 5 of MITCA suggests the implementation of individual marking/correction, and if that is not possible, explicit correction of all homework in the classroom.

STEP 5 of the method also includes giving informative and motivating feedback as a strategy.



Feedback which provides individualized information about improvements and guidance about what needs improving—*informative feedback*—is an educational resource that can optimize learners’ self-regulatory skills and increase their academic engagement (Cooper, 2001; Fong et al., 2016). Based on the theoretical framework of self-regulated learning underlying this method (Schunk & Zimmerman, 1998; Winne & Hadwin, 1998; Zimmerman,

2000), STEP 5 of MITCA will contribute to self-examination and therefore, potentially to the improvement of both current learning and future learning episodes.

With the aim of strengthening those specific proactive benefits of this reflexive phase, MITCA calls for working with the students' confidence, incorporating *motivating feedback* to the feedback strategy. In this regard, there is evidence that feedback that includes both criticism and praise, aimed at aspects that can be controlled, such as effort or dedication, will contribute to students' motivational engagement (Deci & Ryan, 2016; Fong et al., 2019).

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The MITCA method (Method for Setting Homework Tasks) was created with the aim of converting school homework into an educational resource that can improve students' self-regulated learning and school engagement. Specifically, the method aims for tasks set as homework to meet the following five conditions:

- **VARIED.** In addition to post-topic and pre-topic tests, it requires similar amounts of review, organization, and production tasks.
- **SPECIFIC.** The homework tasks should be described by the mental work they involve and the content they address.
- **WORTHWHILE.** The teacher transmits the usefulness, interest, importance, and applicability of the homework tasks they set.
- **WEEKLY.** Homework is set weekly and the students establish timeslots in which to do it.
- **EVALUATED.** The homework is marked/corrected weekly, in the classroom or individually, identifying weaknesses and strengths.



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