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Obligatòria i Batxillerat, Formació Professional i Ensenyament d'Idiomes**

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Resum (200/400 paraules)

Learned helplessness is a form of learning which develops when the subject perceives a loss of control in inescapable situations. This can lead to the development of cognitive and social deficits.

Main research on this topic has been focused on clinical psychology. This TFM will explore the psychological phenomenon of learned helplessness and how this knowledge can be used in school environments and education.

The main objective will be to find out if learned helplessness in school environments and education is actively researched and to ascertain the state-of-the-art of this research.

We will provide a simple general diagnostic tool for teachers to detect signs of learned helplessness on their students.

We will also provide simple treatment strategies to try to alleviate or minimize the effects of learned helplessness on students. These strategies do not treat mental disorders and, because of this, they can be used by any education professional: teachers and Psychopedagogy professionals.

Relevant publications will be searched using five database engines. The results will be analyzed. We will then try to identify the relevant research groups and the most relevant journals on this subject.

Finally, we will review and classify the most important publications and we will identify some of the diagnostic tools that researchers have developed.

Paraules clau (màxim 10)

Technology	Learned helplessness	Learning
Psychopedagogy	Psychology	Educational psychology
Clinical psychology	Psychiatry	

L'especialitat que cursa l'estudiant/a ha de ser una de les paraules clau.



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1. Introduction

In this thesis we will explore the psychological phenomenon of learned helplessness and how we can use this knowledge and apply it to school environments and education.

The main objective will be to find out if learned helplessness is actively researched in relation to school environments and education and to ascertain the state-of-the-art of this research.

We will provide a simple general diagnostic tool for teachers to detect signs of learned helplessness on their students.

We will also provide simple treatment strategies to try to alleviate or minimize the effects of learned helplessness on students. These strategies do not treat mental disorders and, because of this, they can be used by any education professional: teachers and Psychopedagogy professionals.

In Chapter 2 we will provide general information about learned helplessness. It is a type of learning. We will see how it is acquired and the deficits it causes on the person. The consequences affect mind and body and we will see the physiological effects as well.

Learned helplessness will be compared to other types of learning and we will explore the notions of controllability and uncontrollability and the attribution of causality, which define the person's attributional style. This is very important, as a person with an optimistic attributional style will be able to diminish greatly the effects of learned helplessness.

We will then discuss the abovementioned diagnostic and treatment and professional profiles which can do so legally in Spain. As long as no mental disorder is treated, these guidelines can be followed by any teacher and school professional.

In Chapter 3 we will search for relevant publications using five search engines and we will analyze its results. We will then try to identify the relevant research groups and the most relevant journals on this subject.

Finally, in Chapter 4 we will review and classify the most important publications and we will identify some of the diagnostic tools that researchers have developed.

2. Learned helplessness

2.1 Learned helplessness as a type of learning

Learned helplessness is a psychological phenomenon present in animals and in humans. In general terms, it appears when the subject is exposed to inescapable aversive stimuli and, at the same time, when the subject perceives that situation as inescapable (Muñoz, 2009; Abramson, Seligman & Teasdale, 1978).

When the subject perceives the situation as inescapable, the realization comes that there is no control. This is called uncontrollability. The subject is enduring an aversive stimulus that is inescapable and uncontrollable. What can the subject do? Nothing. There is nothing the subject can do. The subject then becomes passive and stops fighting the aversive stimulus.

The subject becomes then *helpless* towards the aversive stimuli and, moreover, *learns* that when the aversive stimuli are present, there is nothing to be done to escape.

In this way learning has been made. The subject has learned to be helpless when the aversive stimuli are present.

This causes three types of deficits that have implications in future learning processes (Abramson, Seligman & Teasdale, 1978; Muñoz, 2009):

- Motivational deficits: The subject perceives that whatever the effort, it will not have an impact on the aversive stimuli. There are then no incentives, no motivation, to make voluntary actions to escape.
- Cognitive or learning deficits: By means of learned helplessness the subject learns of non-contingency. This means that the subject learns that there is no relation between action and consequence. Because of this prior knowledge, it is harder for the subject to learn afterwards of contingency in other situations.
- Emotional deficits: The feeling that one does not have any control can lead to anxiety (Short and Maier, 1993, cited in Muñoz, 2009), fear, apathy (Labrador, 1992, cited in Muñoz, 2009), phobia (Job and Barnes, 1995, cited in Muñoz, 2009) and finally depression (Abramson, Seligman & Teasdale, 1978).

We will now illustrate learned helplessness with an example based in education in mathematics. Our subject is an eight-year old boy. In Primary School he is having problems with mathematics. He does not like the subject and he does poorly getting low grades. So, for him, mathematics is an aversive stimulus.

Learned helplessness appears when he tries to study to get better grades. It happens that no matter how much he studies, he always fails in mathematics. Thus, he cannot escape the aversive stimulus (failure in mathematics). In the end, he perceives, he learns, that no matter how much effort he puts into mathematics, he will never get good grades. He perceives that he has no control and that there is no relationship between effort and academic results. Then he gives up. Learned helplessness has occurred.

He develops motivational deficits, as he perceives that whatever the effort, he will not get good grades. Because of this, there is no motivation to study hard.

He will also develop cognitive or learning deficits, as he has learned that there is no contingency between effort and academic results in one subject. This learning he will carry on to other

subjects which can be similar to mathematics like physics. We can expect also that he will also exhibit this deficit in mathematics when he is in Secondary School.

Finally he will develop emotional deficits, as his perception of uncontrollability in mathematics can lead to anxiety, fear, apathy and depression.

2.2 Physiological effects of learned helplessness

When the subject is exposed to an inescapable aversive situation and, at the same time, when the subject perceives that situation as inescapable and uncontrollable, there are changes at the neuron-synapse level in the brain because of the learning process.

But there are also physiological changes experienced by the body. These changes appear when the original helplessness learning takes places but also in the future, when similar situations arise. These similar situations generate a response on the cognitive level (because of the motivational, cognitive or learning and emotional deficits) but also again on the physiological level.

The most important physiological effects are (Muñoz, 2009):

- Norepinephrine (noradrenaline) depletion which can last for several days (Weis *et al*, 1981, cited in Muñoz, 2009).

Norepinephrine is a molecule generated by several glands in the body (noradrenergic glands) and it is used both as a hormone and as a neurotransmitter.

In humans it is the hormone that prepares the body for action. Because of this it is very active in stress and danger situations.

If this hormone is depleted, then what happens is that the body goes into a depressed state. The body is thus unable to activate itself to give an adequate response.

This situation can last for several days, until the body can generate new norepinephrine to replenish the lost one and attain homeostasis.

- Serotonin depletion which can last for several days (Amat *et al*, 1998, Maier, 2001, cited in Muñoz, 2009).

Serotonin is a hormone and neurotransmitter associated with mood, appetite, sleep and also with the feeling well-being and happiness.

Pharmacological drugs exist which alter the concentration of serotonin in the body. Antidepressant drugs, as well as drugs used to treat anxiety disorders, increase the amount of serotonin.

Serotonin depletion is associated with the failure of the subject to engage in escape attempts from the aversive stimulus. It is the biochemical way of the body to say that this aversive stimulus should not be attempted to escape, as it has learned that it cannot be done. This has the effect of making the subject more passive.

This situation can last for several days, until the body can generate new serotonin to replenish the lost one.

- Other substances (Muñoz, 2009).

Without going into detail, but to illustrate the complexity of the physiological reaction to learned helplessness we mention other substances affected: GABA (*gamma*-

Aminobutyric acid) which is depleted and has a depressor consequence. Acetylcholine, dopamine and corticosteroids have been found also to be related to the phenomenon.

2.3 Learned helplessness and other types of learning

Learned helplessness is a psychological phenomenon associated with classical conditioning (or Pavlovian conditioning) and instrumental conditioning (or operant conditioning) (Muñoz, 2004).

From classical conditioning (or Pavlovian conditioning) we have the notion of the different types of stimuli. We are concerned with aversive stimuli, which are stimuli that are unpleasant to the subject (Vidal, 2009).

Examples of aversive stimuli can be a loud noise or an unpleasant smell. M.E.P. Seligman, in his laboratory experiments on learned helplessness on rats, used electrical discharges as the unavoidable aversive stimulus (Muñoz, 2009).

In education systems, examples of aversive stimuli on students can be exam failure, intra-classroom competitiveness, parental pressure, auto perception of inadequacy, inability to understand the subject and others.

Instrumental conditioning (or operant conditioning) is a type of learning that was used by B. F. Skinner on his works in behaviorism (Sansa, 2009), which has itself been the predominant learning methodology in educational systems around the globe for much of the twentieth century.

Now in the twenty-first century the predominant state-of-the-art learning methodology in educational systems is constructivism. All of the collaborative methodologies derive from constructivism.

But, although the preferred methodology of choice in educational systems has changed, the psychological and physiological effects of classical conditioning, instrumental conditioning and learned helplessness in humans have not changed and are entirely valid. The former is in the realm of education, the latter are in the realms of psychology, physiology and neuroscience.

From instrumental conditioning, we can analyze the different scenarios where aversive stimulus is present. This is the case in two scenarios (Sansa, 2009):

- In 'Positive Punishment' or simply 'Punishment' there is both an aversive stimulus and a *positive* contingency between response given and consequences obtained.

This means that whenever a student, for example, disrupts the classroom (positive contingency), he or she receives an aversive stimulus (punishment). For example, he is expelled from class.

There is a positive contingency, which mean we are encouraging the diminishing or disappearance of the student's conduct.

- In 'Negative Reinforcement' there is both an aversive stimulus and a *negative* contingency between response given and consequences obtained.

This means that when an aversive stimulus happens or is likely to happen (for example, an exam) the subject prevents it from happening (thus the negative contingency).

He can do so either by attempting to escape from it (the student will leave the classroom) or by attempting to avoid it (the student will activate the fire alarm so that he can avoid the exam).

The conduct is reinforced because it has successfully escaped or avoided an aversive stimulus and the subject will try to repeat this conduct in the future.

This 'Negative Reinforcement' type of instrumental conditioning is closely associated with phobias, where subjects will try to avoid aversive stimulus by any means possible.

This is related to learned helplessness, as we have seen how phobia is one of the emotional deficits that can be developed in this phenomenon.

For example, because of learned helplessness a student may develop phobia to exams, or phobia to mathematics. Afterwards the student will try to avoid completely exams or mathematics, even if this means failing general education. This can be one of the causes of school failure.

We have also seen how learned helplessness is associated with serotonin depletion, which is associated with the failure of the subject to engage in escape attempts from the aversive stimulus. This means that the subject may be incapable of escaping or avoiding it.

2.4 Controllability and uncontrollability

This is one key aspect of learned helplessness. We must remember that two conditions have to be met for learned helplessness to occur (Muñoz, 2009; Abramson, Seligman & Teasdale, 1978):

- The subject is exposed to inescapable aversive stimuli.
- The subject perceives that he or she has no control over the inescapable aversive stimulus. This is uncontrollability.

Uncontrollability is essential. If the subject perceives that he or she can control the aversive stimulus then the subject will activate all of his cognitive and physiological resources to escape and learned helplessness will not occur.

If the subject perceives that there is no control over the aversive stimulus then the cognitive and physiological resources will not be activated and learned helplessness will occur.

2.5 Attribution of causality

Learned helplessness theory was initially published in 1975 by Seligman (Muñoz, 2009). This theory had several problems which were addressed when Abramson, Seligman and Teasdale published a revised version in 1978.

This revised version incorporates the ideas of Heider (1958, cited in Muñoz, 2009) and Kelley (1967, cited in Muñoz, 2009). The main idea is that when something happens to us, we try to understand why. We try to understand the causes of what has happened. The answers that we give to this question will determine how it affects us and our perception of controllability.

The following dimensions were established to determine causality when faced with an uncontrollable event:

- Internality vs. Externality: if we believe that the cause of the uncontrollable event is internal, then our self-esteem will be lowered. If we believe it is external, our self-esteem will not be affected.

- Stability vs. Instability: this means whether we believe that the uncontrollable event has stable causes that will make it stable in time or whether we believe that it has changing and variable causes that will make it unstable in time.

If we believe that the uncontrollable event is stable in time learned helplessness will be persistent. If we believe it is unstable in time learned helplessness will not be as severe.

- Globality vs. Specificity: this means whether we believe that the uncontrollable event has broad and global implications or whether we believe it has a limited and specific scope.

If we believe that the uncontrollable event has broad and global implications learned helplessness will be more severe and persistent. On the contrary, if we believe that the uncontrollable event has a limited and specific scope learned helplessness will last much less time and will be less severe.

Following these three dimensions, two attributional styles were defined:

- Optimistic attributional style:
 - For appetitive stimuli – positive events: Internal, Stable, Global attributions.
 - For aversive stimuli – negative events: External, Unstable, Specific attributions.
- Pessimistic attributional style.
 - For appetitive stimuli – positive events: External, Unstable, Specific attributions.
 - For aversive stimuli – negative events: Internal, Stable, Global attributions.

For example, when faced with a very difficult exam (negative event), a student with a pessimistic attributional style may think that he has not studied enough (internal), that this course is just too hard (stable) and that he is not clever enough for this (global).

On the other hand, a student with an optimistic attributional style may think that the exam was badly designed (external), that the teacher will not do the same difficulty again (unstable) and that this is just something related to this course (specific).

The revised learned helplessness theory (Abramson, Seligman & Teasdale, 1978) states that the attributional style of the subject, his or her personality, determines greatly the presence and prognosis of the deficits associated with learned helplessness.

2.6 Diagnostic and treatment of learned helplessness

2.6.1 Diagnostic in clinical psychology and psychiatry: ICD-10 and DSM-5

In clinical psychology and psychiatry the main tools for diagnostic are taxonomical symptom classification manuals. Mainly two are used (Requena, 2015):

- International Statistical Classification of Diseases and Related Health Problems 10th Revision (ICD-10) - Chapter V: Mental and behavioural disorders.

This classification is published by the World Health Organization (WHO), which is an agency of the United Nations.

- The Diagnostic and Statistical Manual of Mental Disorders (DSM), currently in its 5th Edition – DMS-5.

This classification is published by the American Psychiatric Association (APA).

“Learned helplessness” is not present in either the ICD-10 or in the DSM-5. Because of this it can be argued that learned helplessness cannot be officially considered a mental disorder. There is no classification for it, no “mental disorder code”.

It follows, then, that no official diagnostic for learned helplessness can be issued by a clinical psychologist or by a psychiatrist.

However, we have to remember that both ICD-10 and DSM-5 are taxonomies of symptoms. For example: depression, phobia, anxiety and many others.

Learned helplessness is a psychological phenomenon which has been scientifically proven and described in many scientific papers since 1972 (Muñoz, 2009). The key is to understand that sometimes learned helplessness will generate deficits which can be considered a mental disorder and sometimes this will not be the case. Sometimes the deficits will lead to anxiety, phobia, fear, apathy, depression, and sometimes it will not.

Because of this we must conclude that we have no official tool for the diagnosis of learned helplessness which will classify it as a mental disorder, and we cannot have one.

Health professionals can, however, go beyond an official mental disorder they are faced with, like a depression and, in trying to determine its origins, establish that its roots may lie in a learned helplessness phenomenon.

Education systems professionals, teachers and Psychopedagogy professionals, can also analyze a specific student and understand that the source of his or her difficulties may lie in a learned helplessness phenomenon.

2.6.2 General diagnostic and possibilities in education systems

As a general rule we can determine the presence of a learned helplessness phenomenon in a student if the following three criteria are met (Peterson *et al.*, 1993, cited in Muñoz, 2009). These can be used by education systems professionals, teachers, as the basis for identification of the phenomenon. Afterwards a Psychopedagogy professional, a clinical psychologist or a psychiatrist can be requested for more in-depth evaluations:

- Inappropriate passivity. The student with exhibit a passive behavior towards a problem which could be solved if an active approach was used.
- Passivity has appeared as a consequence of exposure to uncontrollable events.
- Motivational, cognitive or emotional deficits developed in original exposure are erroneously associated to new situations.

2.6.3 Treatment in education systems

Emotional deficits caused by learned helplessness such as anxiety, fear, apathy, phobia and depression can only be treated by a qualified mental health professional: a clinical psychologist or a psychiatrist.

There are actions, however, that teachers and psychopedagogy professionals can take in school environments. This list is based on the revised learned helplessness theory by Abramson, Seligman and Teasdale (1978):

- Modification of the student's environment so that there is a lower chance for aversive stimulus to appear.

For example, the teaching methodology can be changed. If the student displayed learned helplessness when faced with an exam or other behavioral techniques, one option is to use constructivist methodologies like cooperative learning.

- Change the student's expectations towards stimuli so that unavoidable events elicit less aversion and reduce the expectations towards unrealistic goals.

For example, we can tell the student that the exam weight on the final grade will be diminished. This way the exam will elicit less aversion and stress.

We can also tell the student that not getting a perfect grade in an exam is not the end of the world. Try to emphasize the learning process as a whole and act on it by modifying the learning methodologies and grade distribution.

- Modification of the student's attributional style.

As we have seen in Chapter 2.5, the student's own attribution of causality is essential to determine the severity of the effects of learned helplessness.

Because of this, attempts could be made by teachers so that aversive stimuli perceived by the student have External, Unstable and Specific attributions.

The ultimate goal for teachers is for the student to acquire an optimistic attributional style.

- Modification of the perception of uncontrollability.

As we have seen in Chapter 2.4, the student's perception of uncontrollability is essential in the appearance of the learned helplessness phenomenon.

Teachers can try to change the student's perception of controllability on the aversive stimuli. They could train students with study techniques so that they can perceive a new degree of control over the stimuli.

2.6.4 Can learned helplessness be cured?

Learned helplessness is a psychological and physiological phenomenon present in many animal families and humans.

It is a cognitive and physical reaction when confronted to uncontrollable aversive stimuli.

Because of this, the phenomenon cannot be cured.

Learned helplessness is a mechanism which is present in our species and others as a result of evolution. We will not analyze in this thesis, however, the evolutionary origins of the phenomenon.

As we have seen, the best preventive approach is to develop an optimistic attributional style. This will minimize the effects of the deficits associated with learned helplessness and could prevent them altogether in certain situations.

2.7 Legal status of learned helplessness in Spain

2.7.1 Classification under Spanish law

As we have seen in Chapter 2.6.1, learned helplessness is not classified as a mental disorder in either the ICD-10 or the DMS-5.

Because of this, it is our understanding that learned helplessness cannot be classified as a mental disorder under Spanish Law.

2.7.2 Mental health professionals and education systems professionals

Mental disorders

Emotional deficits officially classified as mental disorders caused by learned helplessness such as anxiety, fear, apathy, phobia and depression can only be treated by qualified mental health professionals.

Under Spanish law the official degrees required would be:

- Clinical psychologist (Psicólogo Especialista en Psicología Clínica): Requires a Degree in Psychology (Grado en Psicología) and a Master's Degree in Clinical Psychology with residency (Psicólogo Especialista en Psicología Clínica con P.I.R. Psicólogo Interno Residente).
- Psychiatrist (Médico Psiquiatra): Requires a Degree in Medicine (Grado en Medicina) and a Master's Degree in Psychiatry with residency (Especialidad M.I.R. en psiquiatría).

Other actions not associated with mental disorders

As we have seen in Chapter 2.6.3 there are actions, however, that teachers and psychopedagogy professionals can take in school environments. This can be done as long as it does not involve treatment of an officially classified mental disorder.

Under Spanish law the official degrees required would be:

- Teacher (Profesor de Instituto): Requires a Degree (Grado) and a Master's Degree in Teaching (Máster en Formación de Profesorado).
- Psychopedagogy professional (Psicopedagogo de Instituto): Requires a Degree in Psychopedagogy (Grado en Psicopedagogía).
- Psychologist (Psicólogo): Requires a Degree in Psychology (Grado en Psicología).
- General Health Psychologist (Psicólogo General Sanitario): Requires a Degree in Psychology (Grado en Psicología) and a Master's Degree in General Health Psychology (Máster en Psicología General Sanitaria).

3. Literature review on learned helplessness in school environments

3.1 Search engines used

The following search engines have been used in the initial search for publications:

- PsycINFO – American Psychological Association (APA)
<https://www.apa.org/pubs/databases/psycinfo>
- Web of Science – Thomson Reuters
<http://clarivate.com/scientific-and-academic-research/research-discovery/web-of-science/>
- PubMed – U.S. National Library of Medicine
<https://www.ncbi.nlm.nih.gov/pubmed/>
- ERIC - Educational Research Information Center, U.S. Department of Education, U.S.A.
<https://eric.ed.gov/>
- Google Scholar
<https://scholar.google.es/>

3.2 Number of papers identified

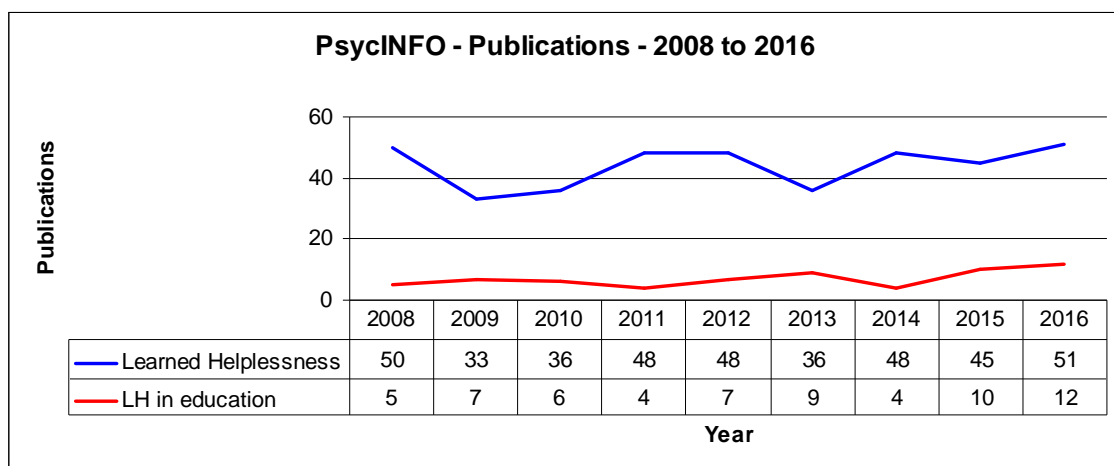
3.2.1 PsycINFO

Query: “learned helplessness” [Blue line]
Result: 2.914

From 1961 to present

Query: “learned helplessness” AND education [Red line]
Result: 373

From 1974 to present



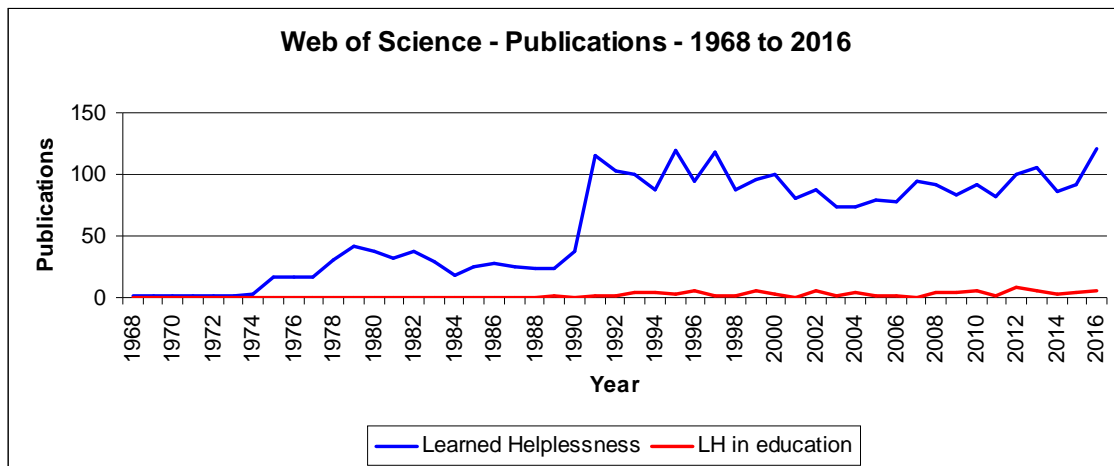
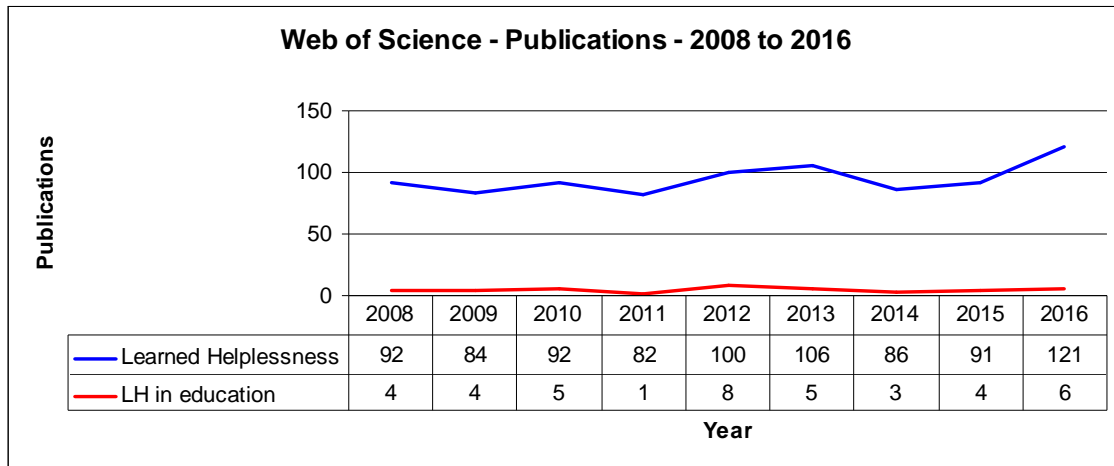
3.2.2 Web of Science

Query: "learned helplessness" [Blue line]
Result: 2.932

From 1968 to present

Query: "learned helplessness" AND education [Red line]
Result: 87

From 1974 to present



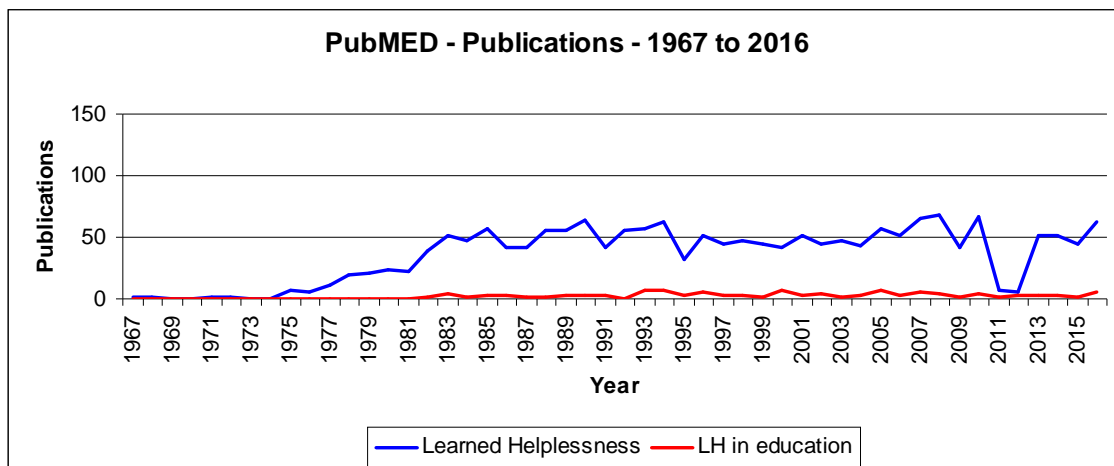
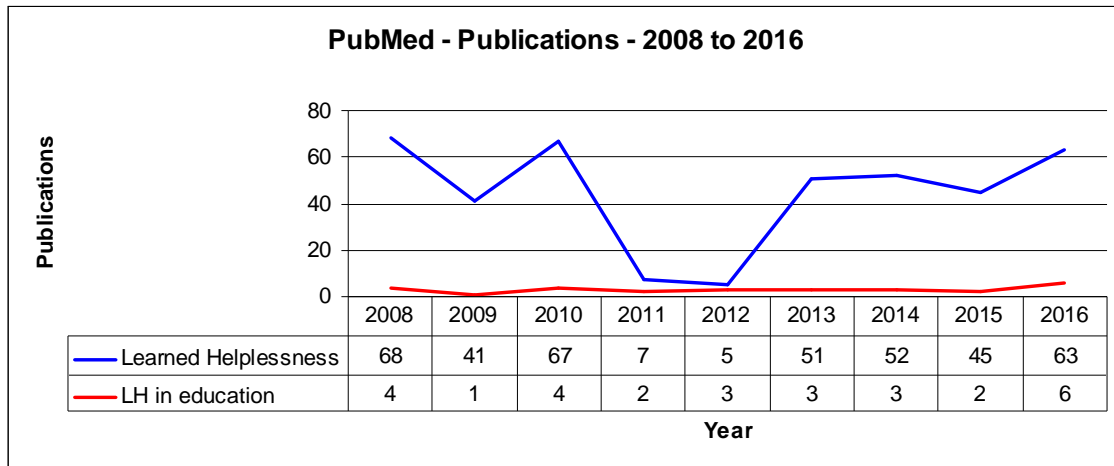
3.2.3 PubMed

Query: "learned helplessness" [Blue line]
Result: 1.935

From 1967 to present

Query: "learned helplessness" AND education [Red line]
Result: 119

From 1982 to present



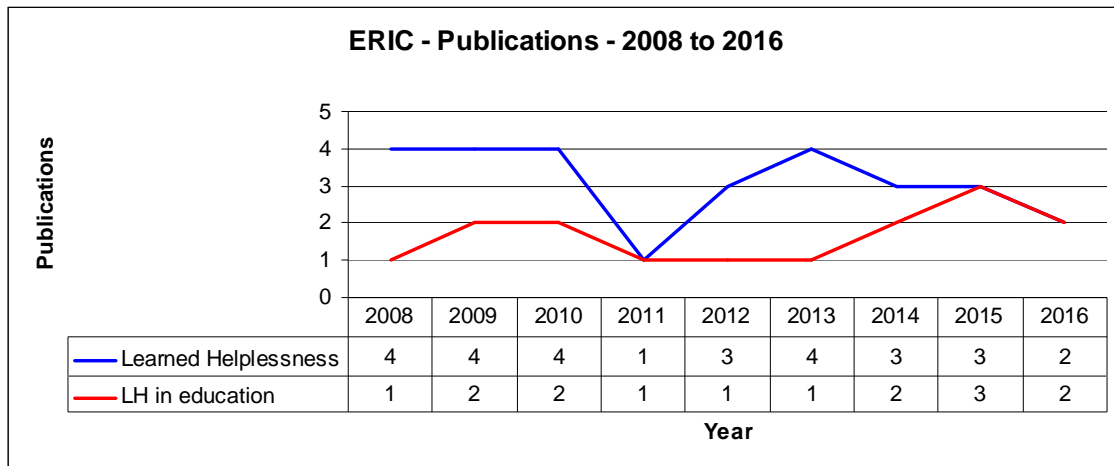
3.2.4 ERIC

Query: "learned helplessness" [Blue line]
Result: 341

From 1969 to present

Query: "learned helplessness" AND education [Red line]
Result: 170

From 1969 to present



3.2.5 Google Scholar

Query: "learned helplessness"
Result: 88.900

Query: "learned helplessness" +education
Result: 48.600

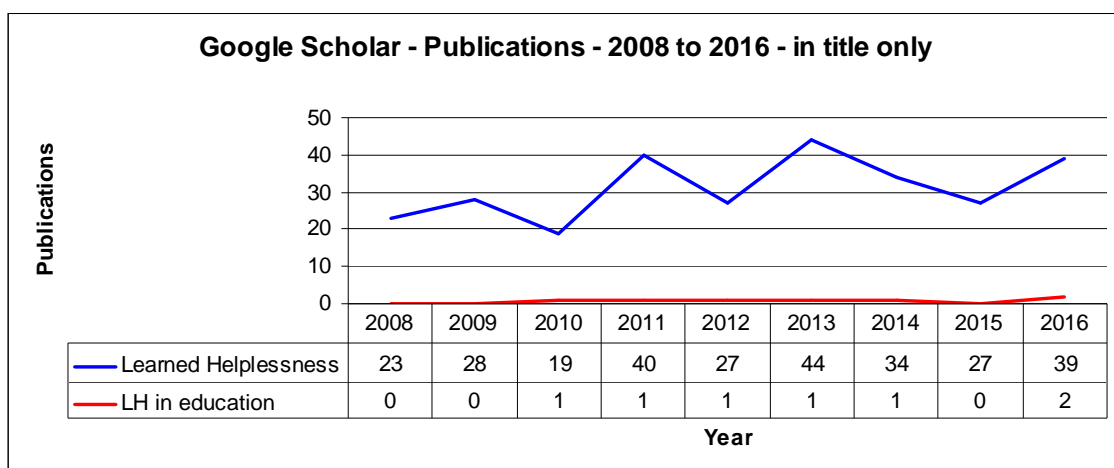
This returns too many results. Also, Google Scholar's interface is very limited as you can only choose to search either in the title or in the full body of the publication. The optimal would be to allow searching also in keywords. We restrict by searching in title only.

Query: **allintitle:** "learned helplessness" [Blue line]
Result: 1.230

From 1968 to present

Query: **allintitle:** education "learned helplessness" [Red line]
Result: 13

From 1992 to present



3.3 Analysis of search engines results

From the search engines results we can reach the following conclusions:

- Learned helplessness is an active area of research.
- Learned helplessness in education is an active area of research. It accounts for about a 1/5 of all papers produced in the area of learned helplessness.
- PsycINFO is the best database to research this topic.

It returns close to 3.000 results for learned helplessness in general and 373 results for learned helplessness in education. This is probably because PsycINFO is administered by the American Psychological Association and is more influenced by psychology and social sciences, as is the case with education.

- Web of Science and PubMed are the next best databases and should be taken into account. They return close to 3.000 results (Web of Science) and close to 2.000 results (PubMed) for learned helplessness in general and close to 100 results (both search engines) for learned helplessness in education. The difference with PsycINFO may be explained by the fact that Web of Science and PubMed are more influenced by the medical sciences, which do not include education.
- ERIC is not a good search engine to research this topic, as it returns very few publications.
- Google Scholar is not a good search engine to research this topic. Google Scholar's interface is very limited as you can only choose to search either in the title or in the full body of the publication. Because of this you cannot search by keywords, which would be very helpful.

Google Scholar does not restrict its searches to *peer-review* publications. This can also explain the large number of records returned. In contrast, *peer-review* publications account for 78% of the PsycINFO database.

3.4 State-of-the-art publications year range definition

Originally it was planned that state-of-the-art publications would mean that they would be selected within the previous 5 years, in the range from 2013 to 2017.

However, fewer publications than expected have been returned from the search engines.

Because of this, state-of-the-art publications are redefined, for the purposes of this thesis, to encompass the last 10 years, in the range from 2008 to 2017.

3.5 Data cleanup

The three most relevant search engines have been selected for data extraction: PsycINFO, Web of Science and PubMed.

The query has been: “learned helplessness” AND education

The year range for search queries has been from 2008 to 2017 (10 years).

The results have been:

- PsycINFO: 68 publications.
- Web of Science: 42 publications.
- PubMed: 28 publications.

After a review of the results, it has become necessary to perform data cleanup.

The reason is that many articles are on the pharmacology or neuroscience fields. For example, the papers “Ginsenoside Rb3 exerts antidepressant-like effects in several animal models.” or “Valproic acid improves the tolerance for the stress in learned helplessness rats.” have been returned by the query but cannot be part of the present study in education.

After data cleanup, the following list of publications is obtained:

- PsycINFO: 28 publications.
- Web of Science: 19 publications.
- PubMed: 5 publications.

Some publications have appeared on one search engine, some in two and some in all three search engines results.

- Publications returned only in PsycINFO: 24 publications.
- Publications returned only in Web of Science: 15 publications.
- Publications returned only in PubMed: 2 publications.
- Publications returned by PsycINFO and Web of Science: 2 publications.
- Publications returned by PsycINFO and PubMed: 1 publication.
- Publications returned by Web of Science and PubMed: 1 publication.
- Publications returned by the three search engines: 1 publication.
- Total number of publications, consolidated: **46 publications.**

From the above list, one conclusion is that the search engine PubMed can be ignored, as only 2 publications can only be found exclusively in this search engine. This accounts for only 4% of the total number of publications returned and consolidated.

It follows, then, that the search engines PsycINFO and Web of Science are sufficient to perform research in the topic of this thesis, learned helplessness in education.

3.6 Identification of relevant research groups on the topic

One of the goals of this thesis was to identify the relevant research groups and institutions on this topic. To accomplish this, the 46 publications obtained in the preceding section have been analyzed. The author affiliation has been collected and is presented in the following table.

Institutions – Higher Education	Number of publications
National Institutes of Health (NIH), USA	1
West Chester University of Pennsylvania, USA Department of Psychology	1
Old Dominion University, USA Department of Psychology	1
University of Richmond, USA Department of Psychology	1
The Chicago School Of Professional Psychology, USA	1
University of California, Santa Barbara, USA UCSB Koegel Autism Center, Graduate School of Education	1
Marquette University, USA Department of Clinical Psychology	1
University of Wisconsin - La Crosse, USA Department of Psychology	1
The University of Texas at El Paso, USA	1
Emory University, USA	1
DePaul University, USA	1
Virginia State University, USA	1
University of Nebraska – Lincoln, USA Department of Educational Psychology	1
University of Southern California, USA	1
California State University Chico, USA	1
University of Minnesota, USA Department of Educational Policy and Administration	1
University of Pennsylvania, USA	1
University of Geneva, Switzerland	1
Zurich University of Arts, Switzerland	1
Mount Saint Vincent University, Canada	1
Concordia University, Canada	1
Aksaray University, Turkey Department of Primary Education	1
Cukurova University, Turkey Department of Elementary Education	1

Inonu University, Turkey Department of Counseling and Guidance	1
Istanbul University, Turkey	1
Al Qasmi College, Israel	1
Tel-Aviv University, Israel	1
Tel Hai Academy College, Israel	1
Islamic Azad University, Iran Department of Psychology	1
University of Queensland, Australia	1
University of Tasmania, Australia	1
University of Wollongong, Australia	1
University of Exeter, England	1
University of Warwick, England	1
Hong Kong Baptist University, P.R. China Department of Education Studies	1
University of Hong Kong, P.R. China Faculty of Education	1
Tohoku University, Japan Graduate School of Education	1
University of Murcia, Spain Department of Personality, Psychological Assessment and Treatment	1
SWPS University of Social Sciences and Humanities, Poland	1
University of Leuven, Belgium	1
University of Botswana, Botswana Department of Educational Foundations	1
University of Messina, Italy Department of Human and Social Sciences	1
Moscow State University of Psychology and Education, Russia Department of Counseling and Clinical Psychology	1
Universidad Pontificia Bolivariana, Colombia Escuela Ciencias Sociales	1

Institutions – Private company	Number of publications
Golf Scientifica Pty Ltd, Australia	1

Consolidating the results by country, we obtain the following table:

Country	Number of publications
USA	17
Switzerland	2
Canada	2
Turkey	4
Israel	3
Iran	1
Australia	3
England	2
Hong Kong, P.R. China	2
Japan	1
Spain	1
Poland	1
Belgium	1
Botswana	1
Italy	1
Russia	1
Colombia	1

From the information presented, the following conclusions can be obtained:

- There seems to be no stable research group on the subject. All academic institutions identified have produced only 1 publication over a 10-year period. This might indicate publications are the result of individual investigator's interest, rather than departmental or university-level interest.
- Learned helplessness in education is a topic only of interest to academia. Higher education institutions have produced 44 publications, whereas private companies have only produced 1 publication.
- This research topic seems to spark interest mainly in the U.S.A., as this country has produced 17 of the 46 publications, which is 37% of the total production.

3.7 Identification of relevant journals on the topic

One of the goals of this thesis was to identify the relevant journals on this topic. To accomplish this, the 46 publications obtained in the preceding section have been analyzed. The journals have been collected and are presented in the following table.

Journal	Number of publications
Books and book chapters	4
Dissertations	4
Conference Proceedings	3
Kuram ve Uygulamada Eğitim Bilimleri (in Turkish)	2
Activitas Nervosa Superior	1
Anales de Psicología (in Spanish)	1
Assessment in Education: Principles, Policy & Practice	1
Canadian Journal of Community Mental Health	1
Computers in Human Behavior	1
Cultural-Historical Psychology	1
Dyslexia	1
Educational Psychology	1
Electronic Journal of Research in Educational Psychology	1
European Journal of Psychology of Education	1
Frontiers in Psychology	1
Gender & Behaviour	1
International Journal of Inclusive Education	1
International Journal of Sports Science & Coaching	1
International Review of Sport and Exercise Psychology	1
Japanese Journal of Educational Psychology	1
Journal of Educational Psychology	1
Journal of Family Psychology, American Psychological Association (APA)	1
Journal of Learning Disabilities	1
Journal of Multilingual and Multicultural Development	1
Journal of School Health	1
Journal of Social Psychology	1
Journal of Sport & Exercise Psychology	1
Journal of Teaching in Physical Education	1
Life Science Journal-Acta Zhengzhou University Overseas Edition	1

Medical Problems of Performing Artists	1
Music Education Research	1
Psychological Bulletin	1
Psychology in the School	1
Scholarship of Teaching and Learning in Psychology	1
Sage Open	1
Sex Roles	1
Social Behavior and Personality	1

From the information presented, the following conclusions can be obtained:

- There seems to be no relevant journals specific to this research area. Almost all journals have published only 1 publication over a 10-year period. This indicates that the journals identified have other or more general interests and learned helplessness in education is just one of the topics that might be included for publication.
- The only exception is the Turkish journal "*Kuram ve Uygulamada Eğitim Bilimleri*", which has published 2 papers over a 10-year period. This journal, however, is written in Turkish and thus has targeted a regional audience.
- This topic has produced 4 books (or book chapters), 4 dissertations and 3 conference proceedings.
- This topic sparks some interest, as demonstrated by the amount of publications analyzed, although there seems to be no critical mass for a specific journal to be created.

4. Results of the literature review

After the review of the 46 publications, we can classify them in the following way. Only the most significant publications are presented.

4.1 Studies with learned helplessness

- In Akca (2011) a study is presented. It took place in Turkey with 708 students. They wanted to investigate the relationship between test anxiety and learned helplessness levels of students. The conclusion of the study is that there are no significant differences between the two variables.
- In Au *et al* (2010) a study is presented that analyzes the relationship between learned helplessness, its risk factors and hopelessness. A causal model is presented and tested on 741 Hong Kong secondary students over a year. Students with pessimistic attributional style tend to take on most of the responsibility for their failing. Teachers can try to reduce these beliefs to stop students from going into learned helplessness.
- Berg *et al* (2009) present a study on 86 elementary boys and girls in Canada. Gender differences, self-perception and its relation with learned helplessness (depressed mood) is explored. Results show gender stereotypical self-perceptions and the importance of addressing these issues.
- Brown *et al* (2008) present a study with 96 economically disadvantaged children. The variables analyzed are chaotic conditions, sleep problems and responses to academic challenge. Chaotic living conditions have statistically predicted helplessness to academic challenges. Sleep problems mediate in this relationship.
- Brusso *et al* (2013) present a study with 387 participants. They were trainees completing a videogame-based training program. The paper analyzes the impact of unrealistic difficult goal-setting and how this is mediated by self-regulation.
- Ullusoy *et al* (2013) present a study with 27 eight-grade elementary students. The goal was to analyze the effect of a program designed to reduce learned helplessness and irrational beliefs. Results prove that the program is effective in reducing irrational beliefs, but not learned helplessness.
- Hen *et al* (2014) present a study with 287 students with and without learning disabilities. Academic procrastination is associated with learned helplessness, which can lead to high levels of anxiety, stress and illness. The results show that students with learning disabilities scored lower in emotional intelligence and academic self-efficacy and higher on academic procrastination.
- Mouratidis *et al* (2008) present a study based on self-determination theory with middle school students. The task assigned was a physical education task. The motivating role of positive competence feedback was analyzed in two studies. Results show that motivation did not have effects on performance, but it did have an effect on competence satisfaction and well-being.
- Qutaiba (2010) presents a study on special-education teachers in the Israeli Arab sector. Variables are analyzed which have an effect on stress and burnout. A relation is made between negative school involvement and learned helplessness suggesting more involvement in school can improve their well-being and work efficiency.

- Nenty *et al* (2009) present a study on gender, mathematics and learned helplessness in secondary school students in Lesotho. 310 students from 12 senior secondary schools completed a series of questionnaires. Results show that gender is not a significant influence on learned helplessness.

4.2 Learned helplessness as a variable

- In Affonso *et al* (2010) the concept of learned helplessness is used to describe the situation of youth in the context of violence in a school environment. It is only a description; no experimentation has taken place using learned helplessness.

4.3 New or evolved theoretical models

- Burnette *et al* (2013) present an evolution of self-control theory by Carver and Scheier. The idea is to associate implicit theories with self-regulation by means of three processes: goal setting, goal operating, and goal monitoring.
- Conway *et al* (2011) present a conference paper that develops on empowerment theory. The goal is to develop a ecological model (a systemic model), that allows to understand the 'fit' of the individual with the environment (school, family, neighborhood), so that optimal development can occur.
- Zaretskii (2016) presents a multidimensional model based in Lev Vygotsky's work on the zone of proximal development. The work is based on the experience of running summer schools for children with disabilities. The key issue is Vygotsky's idea of the relationship between learning and development.
- Kim (2008), in his dissertation, proposes a way to neutralize learned helplessness. This can be called also rebounding performance. The method uses anagrams and success exposure. Other variables that can act as mediators are ability and effort attribution.
- Reyna (2008) discussed the notion of the attributional style and its importance. He does so by means of attributional stereotypes in the classroom. The stereotypes derive from ethnic origins of students, which are internalized by the teachers. Because of this, they will look for internal causes for student achievement.

4.4 Learned helplessness instruments

- Biber *et al* (2014) present this study at a conference. It comprises 305 university students who are receiving education in the Programs of Primary Mathematics Teaching and Classroom Teaching. The idea is to find out the learned helplessness levels of these students in relation to other variables such gender, program of study and grade levels. An instrument was used "Learned Helplessness in Mathematics Scale", which was developed by Biber and Baser.

- Sorrenti *et al* (2015) present a study which validates the “learned helplessness questionnaire” (LHQ). It is an instrument that provides a measure of learned helplessness (LH) and mastery orientation (MO) in school environments. It can be used by school psychologists and teachers.
- Koegel *et al* (2016) present, in this book chapter, the “Pivotal Response Treatment” (PRT). It is in a book that develops intervention models on young children with autism. Pivotal Response Treatment is based on learned helplessness, and it is designed to improve motivation. This has proved to reduce the levels of learned helplessness and increase responsiveness and engagement.

4.5 Examples of learned helplessness

- Lindstedt *et al* (2008) present a case report of a young man that began to develop learned helplessness. Reading disability had developed but, as he grew older, he would start to give up on assignments. He would not attempt them. This book chapter highlights the problems associated with learned helplessness such as anxiety, and symptoms of depression.

5. Conclusions and future work

Learned helplessness is a psychological phenomenon. Because of this it has received interest mainly from the psychological and medical sciences.

In this thesis the main objective was to ascertain whether learned helplessness was also actively researched in relation to school environments and education.

After reviewing the literature we have to conclude that yes, this is an active field of research.

A second objective has also been achieved. With this thesis we have raised the level of awareness on this topic. This type of learning was not well-known among education professionals but now this thesis can change this and encourage more research in this area.

We saw in Chapter 2.6.2 a simple general diagnostic tool that teachers can use to detect signs of learned helplessness in their students.

In Chapter 2.6.3 we saw simple treatment strategies to try to alleviate or minimize the effects of learned helplessness on students. These strategies do not treat mental disorders and, because of this, they can be used by any education professional: teachers and Psychopedagogy professionals.

After reviewing the literature we have identified three instruments:

- In Biber *et al* (2014), the "Learned Helplessness in Mathematics Scale".
- In Sorrenti *et al* (2015), the "learned helplessness questionnaire" (LHQ).
- In Koegel *et al* (2016), the "Pivotal Response Treatment" (PRT).

We have not analyzed in detail these instruments, which have been designed by their authors for specific purposes. Their in-depth analysis can be carried out in future work.

Also in future work other ideas can be explored. One such idea, related to school environments, is the relationship between learned helplessness and bullying. This seems only natural to explore, since bullying has a strong component of helplessness.

References

- Abramson, L.Y., Seligman, M.E.P. & Teasdale, J. (1978). Learned helplessness in humans: critique and reformulation. *Journal of Abnormal Psychology*, 87, 49-74.
- Affonso, D. D., Mayberry, L., Shibuya, J. Y., Archambeau, O. G., Correa, M., Deliramich, A. N. and Frueh, B. C. (2010), Cultural Context of School Communities in Rural Hawaii to Inform Youth Violence Prevention. *Journal of School Health*, 80: 146–152. doi:10.1111/j.1746-1561.2009.00478.x
- Akca, F. (2011). The relationship between test anxiety and learned helplessness. *Social Behavior and Personality*, Vol 39(1), 2011, 101-112. doi:10.2224/sbp.2011.39.1.101
- Au, R. C. P., Watkins, D. A., Hattie, J. A. C. (2010). Academic risk factors and deficits of learned hopelessness: A longitudinal study of Hong Kong secondary school students. *Educational Psychology*, Vol 30(2), Mar 2010, 125-138. doi:10.1080/01443410903476400
- Berg, D.H., Klinger, D.A. (2009). Gender Differences in the Relationship Between Academic Self-Concept and Self-Reported Depressed Mood in School Children. *Sex Roles*, Vol 61(7-8), 501-509. doi: 10.1007/s11199-009-9652-2
- Biber, M., Biber, S.K. (2014). Investigation of the level of prospective teachers' learned helplessness in mathematics in relation of various variables. *5TH WORLD CONFERENCE ON EDUCATIONAL SCIENCES. Procedia Social and Behavioral Sciences*, Vol 116, 3484-3488. DOI: 10.1016/j.sbspro.2014.01.788
- Brown, E.D., Low, C.M. (2008). Chaotic living conditions and sleep problems associated with children's responses to academic challenge. *The Journal of Family Psychology*, 22(6):920-3. doi: 10.1037/a0013652
- Brusso, R.C., Orvis, K.A. (2013). The impeding role of initial unrealistic goal-setting on videogame-based training performance: Identifying underpinning processes and a solution. *Computers in Human Behavior*, Vol 29(4), 1686-1694, DOI: 10.1016/j.chb.2013.01.006
- Burnette, J.L., O'Boyle, E.H., VanEpps, E.M., Pollack, J.M. and Finkel, E.J. (2013). Mind-Sets Matter: A Meta-Analytic Review of Implicit Theories and Self-Regulation. *Psychological Bulletin*, Vol 139(3), 655-701. DOI: 10.1037/a0029531
- Conway, N. and Paton, D. (2011). EQUITABLE AND EMPOWERING SCHOOL SETTINGS: REDUCING THE GAP BETWEEN ADVANTAGE AND DISADVANTAGE. *Conferencia: 4th International Conference of Education, Research and Innovation (ICERI)*, 4678-4686. Madrid.
- Gwernan-Jones, R. and Burden, R.L. (2009). Are they just lazy? Student teachers' attitudes about dyslexia. *Dyslexia: An International Journal of Research and Practice*, Vol 16(1), Feb 2010, 66-86. doi: 10.1002/dys.393
- Hajiarbabi, F., Ahadi, H., Delavar, A. and Asadzadeh, H. (2012). Computer Games and Its Effect on Attribution of Learned Helplessness Students. *LIFE SCIENCE JOURNAL-ACTA ZHENGZHOU UNIVERSITY OVERSEAS EDITION*, Vol 9(3), 1510-1517
- Hen, M. and Goroshit, M. (2014). Academic Procrastination, Emotional Intelligence, Academic Self-Efficacy, and GPA: A Comparison Between Students With and Without Learning Disabilities. *JOURNAL OF LEARNING DISABILITIES*, Vol 47(2), 116-124. DOI: 10.1177/0022219412439325

- Hernández, O.S., Méndez, F.X. and Garber, J. (2015). Divergent explanatory production: The relationship between resilience and creativity. *Electronic Journal of Research in Educational Psychology*, Vol 13(3), 551-568. doi: 10.14204/ejrep.37.14126
- Hildebrandt, H., Nubling, M. and Candia, V. (2012). Increment of Fatigue, Depression, and Stage Fright During the First Year of High-Level Education in Music Students. *MEDICAL PROBLEMS OF PERFORMING ARTISTS*, Vol 27(1), 43-48.
- Jensen, E. (2010). *Different brains, different learners: How to reach the hard to reach*, 2nd ed. Thousand Oaks, CA, US: Corwin Press
- Kim, Y.H. (2008). Rebounding from learned helplessness: A measure of academic resilience using anagrams. *Dissertation Abstracts International: Section B: The Sciences and Engineering*, Vol 68(10-B), 2008, 6947.
- Koegel, L.K., Ashbaugh, K., Koegel, R.L. (2016). Pivotal Response Treatment. In Lang, R. (Ed), Hancock, T.B. (Ed) and Singh, N.N. (Ed)., *Early intervention for young children with autism spectrum disorder.*, (pp. 85-112). Cham, Switzerland: Springer International Publishing
- Krejtz, I. and Nezlek, J.B. (2016). It's Greek to me: Domain specific relationships between intellectual helplessness and academic performance. *The Journal of Social Psychology*, Vol 156(6), 664-668. doi: 10.1080/00224545.2016.1152219
- Lindstedt, K. and Zaccariello, M.J. (2008). A tale of two assessments: Reading fluency. In Apps, J.NN.(Ed), Newby, R.F. (Ed), Roberts, L.W. (Ed). *Pediatric neuropsychology case studies: From the exceptional to the commonplace*, (pp. 191-199). New York: Springer Science. doi: 10.1007/978-0-387-78965-1_20
- Lowe, B. (2014). Professionalism, golf coaching and a Master of Science degree: A commentary. *International Journal of Sports Science & Coaching*, Vol 9(4), 869-872.
- Marshik, T.T., Kortenkamp, K.V., Cerbin, W. and Dixon, R. (2015). Students' understanding of how beliefs and context influence motivation for learning: A lesson study approach. *Scholarship of Teaching and Learning in Psychology*, Vol 1(4), 298-311. doi: 10.1037/stl0000033
- Martinez, V. (2017). Am I another statistic?: A phenomenological study of border region at-risk Latina/o youth. *Dissertation Abstracts International Section A: Humanities and Social Sciences*, Vol 77(11-A(E)).
- Mouratidis, A., Vansteenkiste, M., Lens, W., Sideridis, G. (2008). The motivating role of positive feedback in sport and physical education: evidence for a motivational model. *Journal of sport & exercise psychology*, 30(2):240-68.
- Muñoz, E. (2004). *Factores determinantes en el abandono terapéutico en pacientes con trastornos mentales: el papel de la indefensión aprendida* (Doctoral thesis, Universidad Complutense de Madrid, Madrid, Spain). Retrieved from <http://eprints.ucm.es/5188/>
- Muñoz, E. (2009). Indefensión aprendida. En E. Muñoz (Coord.), J. I. Pozo, D. Redolar, J. Sansa and J. Vidal, *Psicología del aprendizaje* (cap. 4, p. 1-56). Barcelona: FUOC.
- Nenty, H. J. and Ogwu, N.E. (2009). Influence of gender and learned helplessness on some mathematics-related cognitive behaviour of Lesotho senior secondary school students. *Gender & Behaviour*, Vol 7(1), 2123-2135. doi: 10.4314/gab.v7i1.45033

- Pajares, F. (2009). Toward a positive psychology of academic motivation: The role of self-efficacy beliefs. In Gilman, R. (Ed), Huebner, E.S. (Ed), Furlong, M.J. (Ed), *Handbook of positive psychology in schools*, (pp. 149-160). New York: Routledge/Taylor & Francis Group.
- Qutaiba, A. (2010). The relationship between the level of school-involvement and "Learned helplessness" among special-education Arab-Palestinian teachers in Israel. *World Conference on Psychology, Counselling and Guidance (WCPCG 2010)*, Vol 5, 1326-1333. DOI: 10.1016/j.sbspro.2010.07.283
- Ranahan, P. and Thomas, T. (2016). Mental health literacies for interprofessional collaboration: Youth workers' perspectives on constraining and supporting factors. *Canadian Journal of Community Mental Health*, Vol 35(3), 69-81. doi: 10.7870/cjcmh-2016-039
- Requena, E. (2015). Bases conceptuales y sistemas de clasificación de la psicopatología. En R. Muiños et al. (Eds.), *Psicopatología de adultos* (cap. 1, p. 1-86). Barcelona: FUOC.
- Redondo, J., Ingles, C.J., Garcia-Fernandez, J.M. (2014). Prosocial behavior and academic self-attributions in Secondary Education. *Anales de Psicología*, Vol 30(2), 482-489. DOI: 10.6018/analesps.30.2.148331
- Reyna, C. (2008). Ian is intelligent but Leshawn is lazy: Antecedents and consequences of attributional stereotypes in the classroom. *EUROPEAN JOURNAL OF PSYCHOLOGY OF EDUCATION*, Vol 23(4), 439-458.
- Rotenberg, V.S. (2012). Religious education as a prevention of learned helplessness and depression: Theoretical consideration. *Activitas Nervosa Superior*, Vol 54(1-2), 1-9.
- Sanchez-Mazas, M. (2015). The construction of "official outlaws". Social-psychological and educational implications of a deterrent asylum policy. *Frontiers in Psychology*, Vol 6, Article 382.
- Sansa, J. (2009). Condicionamiento instrumental. En E. Muñoz (Coord.), J. I. Pozo, D. Redolar, J. Sansa and J. Vidal, *Psicología del aprendizaje* (cap. 3, p. 1-135). Barcelona: FUOC.
- Scherer, S., Talley, C.P. and Fife, J.E. (2017). How Personal Factors Influence Academic Behavior and GPA in African American STEM Students. *Sage Open*, Vol 7(2). DOI: 10.1177/2158244017704686
- Shell, D.F. and Husman, J. (2008). Control, motivation, affect, and strategic self-regulation in the college classroom: A multidimensional phenomenon. *Journal of Educational Psychology*, Vol 100(2), 443-459. doi: 10.1037/0022-0663.100.2.443
- Sorrenti, L., Filippello, P., Costa, S. and Buzzai, C. (2015). A psychometric examination of the learned helplessness questionnaire in a sample of Italian school students. *Psychology in the Schools*, Vol 52(9), 923-941. doi: 10.1002/pits.21867
- Spencer, S. A. (2009). The effects of a fluency intervention program on the reading outcomes of middle school students with severe reading disabilities. *Dissertation Abstracts International Section A: Humanities and Social Sciences*, Vol 69(11-A), 4293.
- Tanaka, M. (2013). Causal attributions in children and adults who have been diagnosed as having attention deficit/hyperactivity disorder (AD/HD): A review. *Japanese Journal of Educational Psychology*, Vol 61(2), 193-205. doi: 10.5926/jjep.61.193
- Tümekaya, S. (2012). The investigation of the epistemological beliefs of university students according to gender, grade, fields of study, academic success and their learning styles. *Kuram ve Uygulamada Eğitim Bilimleri*, Vol 12(1), 88-95.

- Trang, T.T.T., Baldauf, R.B. and Moni, K. (2013). Investigating the development of foreign language anxiety: an autobiographical approach. *JOURNAL OF MULTILINGUAL AND MULTICULTURAL DEVELOPMENT*, Vol 34(7), 709-726.
DOI: 10.1080/01434632.2013.796959
- Trout, J. and Graber, K. (2009). Perceptions of overweight students concerning their experiences in physical education. *Journal of Teaching in Physical Education*, Vol 28(3), 272-292.
- Ulusoy, Y. and Duy, B. (2013). Effectiveness of a psycho-education program on learned helplessness and irrational beliefs. *Kuram ve Uygulamada Eğitim Bilimleri*, Vol 13(3), 1440-1446.
- Vedantham, A. (2012). Making youtube and facebook videos: Gender differences in online video creation among first-year undergraduate students attending a highly selective research university. *Dissertation Abstracts International Section A: Humanities and Social Sciences*, Vol 72(7-A), 2295.
- Vella, S.A., Braithewaite, R.E., Gardner, L.A. and Spray, C.M. (2016). A systematic review and meta-analysis of implicit theory research in sport, physical activity, and physical education. *INTERNATIONAL REVIEW OF SPORT AND EXERCISE PSYCHOLOGY*, Vol 9(1), 191-214. DOI: 10.1080/1750984X.2016.1160418
- Vidal, J. (2009). Condicionamiento clásico pavloviano. En E. Muñoz (Coord.), J. I. Pozo, D. Redolar, J. Sansa and J. Vidal, *Psicología del aprendizaje* (cap. 2, p. 1-76). Barcelona: FUOC.
- Wong, M.W.Y. and Chik, M.P.Y. (2015). Learned helplessness in inclusive music classrooms: voices of Hong Kong primary schools music teachers. *INTERNATIONAL JOURNAL OF INCLUSIVE EDUCATION*, Vol 19(9), 965-977. DOI: 10.1080/13603116.2015.1019374
- Wong, M.W.Y. and Chik, M.P.Y. (2016). Teaching students with special educational needs in inclusive music classrooms: experiences of music teachers in Hong Kong primary schools. *MUSIC EDUCATION RESEARCH*, Vol 18(2), 195-207,
DOI: 10.1080/14613808.2015.1044509
- Yeh, S.S. (2010). Understanding and addressing the achievement gap through individualized instruction and formative assessment. *Assessment in Education: Principles, Policy & Practice*, Vol 17(2), 169-182. doi: 10.1080/09695941003694466
- Zaretskii, V. K. (2016). Vygotsky's principle "one step in learning—One hundred steps in development": From idea to practice. *Cultural-Historical Psychology*, Vol 12(3), 149-188. doi: 10.17759/chp.2016120309