

# The influence of feedback on the levels of self-efficacy and attributional style

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Initial receipt: 21.09.2012 Final revision received: 03.02.2013 Accepted: 12.02.2013

**Abstract:** Studies have shown that a high level of perceived self-efficacy is correlated to attributional mechanisms that protect a positive self-image. This current study analyzes the influence of feedback (positive or negative) on attributional style (operationalized in three dimensions – internality/externality, instability/stability, specificity/globality) and on the level of perceived self-efficacy. The research includes two studies: one taken with subjects from primary school (third and fourth grade) and middle school (sixth and seventh grade). The results show that the influence of feedback on levels of self-efficacy and attributional style is stronger in primary school than in middle school. There are also gender differences for both levels of education in what concerns the influence of feedback: the boys have the perception of a stronger effect of positive feedback compared to girls and have better scores of perceived self-efficacy; compared to girls, boys tend to do more specific and instable attributions when they receive negative feedback.

**Keywords:** perceived self-efficacy, attributional style, feedback type

## Introduction

Since childhood we have learned specific patterns of reaction and approach toward certain events, and our value system, later applied to almost every situation, is built and strengthened from a very young age as a consequence of how others react. Early cognitive development draws attention upon the effect of certain psychological processes which are developed in childhood and consolidated during adolescence.

These constructs are perceptions of self and of one's own abilities and attributional system. The idea of the importance of the perception of competence for one individual to engage in activities has a long history in psychology (James, 1890, White, 1959). Feeling competent in order to act efficiently in one's environment, feeling that an individual has control over the result of their actions is one of the human fundamental needs.

The feeling of competence was named by A. Bandura (1986). Personal self-efficacy and can be defined as the evaluation made by an individual about his/her own capacity to successfully accomplish a certain task. This notion has a contextual meaning, because it is task dependent.

Another author, Susan Harter (1983) uses the concept of perception of competence, defined as a general measure of the estimation of self competence for a certain area and applied to a variety of tasks. In this case we are presented with a dimension that is more stable and change resistant.

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Both definitions underline the central aspect of self-evaluation of competence.

In the last few years the two notions are considered to be interchangeable. Most researchers use a general definition: the perception of competence is the evaluation made by a student on his/her own capacity to succeed in activities related to certain areas of study or to a certain pedagogical area.

Even from the first launch of self-efficacy as a concept, Bandura (1977) implied that its predictive power for motivation and behavioral change increases as the level of specificity of the related areas improves.

A few researchers (Bandura, 1997; Bouffard - Bouchard, Parent, Larivée, 1993) assumed that the perception of competence could predict the educational performance of a student more than his/her real resources.

Attribution is the process of relating an event with the conditions that determined its appearance. Usually people tend to do more than simply observe their surrounding reality: they try to explain their own and others' behavior, to interpret what happens, to look for causes of an event or behavior.

Fritz Heider (1958), the father of the attribution theory, considers attribution as the process that allows the individual to perceive and predict or control the reality. Attribution is a human cognitive need. In this theoretical area an interesting field of research has proven to be that which is focused on attribution of success and failure.

B. Weiner (2000) showed that generally the causes invoked by individuals to explain success or failure of self or others can be arranged from at least two causal dimensions: intern (person related) / extern (situation related) and stable (permanent, distinct) / instable (accidental).

B. Weiner also suggests the pair of criteria: manageable – unmanageable, describing the extent to which the student believed that he/she can control his/her educational situation. For pedagogical reasons, these are secondary criteria or attributions, e.g: if the student attributes the failure to his/her own inability, which is considered unmanageable, they will feel shame, embarrassment, while decreasing their effort and performance. When the student attributes the failure to low effort, considering the effort as manageable, he/she will feel responsible and may intensify their effort of learning, improving his/her performance.

Studies have indicated a relation of interdependency between self-esteem, main attributional style, self-evaluation of specific or global self-efficacy and reactions to positive or negative feedback. In school, the students constantly receive information on their level of performance related to certain tasks. This feedback influences their self-perception. In this case, the attribution theory is important in order to understand how students interpret this feedback and use it for improvement for later educational results, and also to see how teachers can offer feedback to their students that has an optimal motivational value.

The students who attribute their failures to solve a certain type of task to a lack of ability are expected to show expectancies of a lack of success in similar tasks, and their level of motivation to lower (Bar-Tal, 2000). Anticipating possible

negative feedback diminishes the motivation for educational tasks, and this could lead to another failure.

Depending on anterior results, the individual will evaluate his/her own efficacy when confronted with other situations. People with high levels of self-efficacy trust their personal abilities to achieve success in a certain area of activity. Bandura notes that a subject can show superior levels of self-efficacy in a certain behavior or situation and low levels in other situations. For example, a person expects success in career, but has an expectancy of failure in their personal life.

The self-perception of competence also affects the perception of failure or reduced performance. In these situations the lack of success tends to be attributed to low effort invested in the task and less to a lack of a specific competence for that task. In other words, high levels of self-efficacy is associated with self-protective attributions of failure or success. Self-efficacy, as a cognitive process, generates choices, motives, emotions, ideas and behaviors. The individual not only evaluates his/her abilities in the light of past successes or failures, but also chooses certain tasks, distributes his/her effort, watches his/her progress depending on past experience.

The feeling of self-efficacy will be enhanced if the teachers offer to their students positive feedback on their achievements and teach them to do internal attributions of success. Students can be taught to appreciate their successes as results of their own effort („I succeeded because I learned so much”) or of their own abilities („I succeeded because I am capable”) and to avoid explaining their success based on luck, chance, destiny or situation. The simple fact of receiving some feedback over an activity is essential for the motivation of the student. The perception of control over a situation is also very important for the individual's engagement with an activity. Regardless of the type of attribution made by an individual (internal, external, stable, unstable), it is important to note the extent in which the invoked causes are considered manageable, under his/her influence or unmanageable.

### **The objective and scope of this research**

This present study aims to analyze the influence of a feedback type (positive/negative) on levels of perceived self-efficacy and attributional style for a certain task. The feedback type varied depending on the performance that the individual had for a specific task: he/she either managed to solve the task correctly and received positive feedback, or didn't end the task or ended it incorrectly and they received negative feedback. This way the fluctuation of students' perceived self-efficacy in simple daily tasks is evaluated and, subsequently, the emergence of stress-generating situations that can affect individual development.

## **Research hypotheses**

### ***General hypothesis***

The level of perceived self-efficacy and the attributional style are influenced by the type feedback received by subjects (positive/negative), by the time of measurement (pre-test/post-test) and by gender.

### ***Specific hypotheses***

1: The level of perceived self-efficacy is influenced by the type of feedback and by the subjects' gender.

2: The attributional style (internality/externality, instability/stability, specificity/globality) is influenced by the type of feedback and by the subjects gender.

3: The level of perceived self-efficacy is influenced by the type of feedback and the time of testing (pre-test/post-test)

4: The attributional style (internality/externality, instability/stability, specificity/globality) is influenced by the type of feedback and the time of measurement.

### **Variables:**

VI1: type of feedback-positive / negative

VI2: subjects' gender –masculine / feminine

VI3: time of measurement – pre-test / post-test

VD1: level of perceived self-efficacy

VD2: attributional style:

internality-externality

instability- stability

specificity- globality

## **Method**

### ***Subjects***

This research contains two studies: the first one including primary school students (III-IVth grade), and the second study including middle school students as participants (VI-VIIth grade ).

In the first study 35 girls and 25 boys participated, of whom 24 were placed in the „positive feedback” condition and 36 in the „negative feedback” condition.

The second study included 22 girls and 38 boys, of whom 36 were placed in the „positive feedback” condition, while 24 were in the „negative feedback” condition.

This present study is a quasi-experiment, because the groups are based on the grade in which the students were, and no randomized selection has been made. The research design is mixed, 2 (feedback – positive or negative) X2 (gender – masculine or feminine) X2 (time of measurement – pre-test or post-test).

### **Procedure**

The current research implied pretest and posttest measurements of the level of perceived self-efficacy and attributional style.

Firstly, the subjects filled in two questionnaires: The Evaluation of attributional style Questionnaire and The Perceived Self-efficacy Scale.

The experimental manipulation was placed between the two measurements. The subjects were asked to work on a puzzle for about 15-20 minutes, each participant having in front of them the complete image of the puzzle that they had to solve. When it came to the choice of this task the level of cognitive development of the participants was taken into account, the difficulty level being correlated with the general cognitive abilities that are characteristic for the subjects' age group, as stated by the scientific literature.

The experimental manipulation implied placing the subjects in one of the two experimental conditions, either the „positive feedback” situation (the subjects complete the task), or in the „negative feedback” condition (the subjects were not able to complete the task because three pieces of the puzzle were missing in order to make this task unsolvable)

Subjects from the „positive feedback” condition were told after the completion of the task: ”Well done! You successfully completed the task!”. Subjects in the „negative feedback” condition were told: ”You failed to complete the task!”. Two similar puzzles were used, with the same number of pieces (12) and the same theme for the primary school students as well as two other similar puzzles (same number of pieces – 60, same theme) were used for the middle school students. Each student received a different puzzle from his/her deskmate in order not to help each other.

After this task, the level of perceived self-efficacy and the three-dimensional attributional style were reevaluated with the same instruments. The second measurement was made three days after the first measurement. After the second administration of the questionnaires (the order of administration was changed in order to avoid the memorizing) the subjects were debriefed by explaining to them that those who were not able to solve the puzzle could not solve it anyway because of the three missing pieces.

### **Instruments**

Two questionnaires were used for this research: *The Perceived Self-efficacy Scale* (Ralf Schwarzer & Matthias Jerusalem, 1993, revised 2000) and *The Children's Attributional Style Questionnaire* (Seligman et al.,1984).

In order to measure the dependent variable „level of perceived self-efficacy” The Perceived Self-efficacy Scale (authored by Ralf Schwarzer and Matthiash Jerusalem 1993 and revised 2000) was used. This scale has 10 items item 5 and item 8 are reversed. The 10 items were added another one which strictly concerns the evaluation of a result in a specific task („ If I was given a puzzle, I could solve it without difficulty”). This scale measures the perception of self-competence in the educational context, the belief or the faith that the individual has in his/her own abilities to organize and execute all the necessary actions in order to produce the desired effects.

For this current research the scale was translated and pretested, an Alpha Cronbach’s coefficient of 0,910 having been reached. Each item has four options: never, sometimes, often, always. The response options were rated as the following: „never” =1 point, „sometimes”=2 points, „often”=3 points, „always”=4 points. A high total score (44 being the maximum) means a high level of perceived self-efficacy, while a low total score (11 being the minimum) indicates a low level of perceived self-efficacy.

The second dependent variable „attributional style” with the following dimensions: internality-externality, instability-stability, specificity – globality was measured with The Children’s Attributional Style Questionnaire (Seligman et al., 1984). The questionnaire assesses the mode in which the individual interprets his/her own behavior or the behavior of others in different situations. The initial questionnaire included 48 items, but for this current research the number of the items was reduced to 24 using the experts’ technique, maintaining the same structure and adapting the items for the target population.

The new scale was pre-tested with good reliability coefficients for each dimension. There are three dimensions from the scale: internality-externality (Alpha Cronbach’s=0,700), instability-stability (Alpha Cronbach’s=0,668), specificity- globality (Alpha Cronbach’s=0,687). The 24 items were grouped into two categories, namely 12 items referring to positive events (4 items for each dimension) and 12 items referring to negative events (4 items for each dimension). The items were scored as follows:

- 1- *internality-externality*: the answer assessing the internal attribution was scored with 2 points, while the answer assessing the external attribution was scored with 1 point. A high score obtained on this dimension indicates an internal attributional style, while a low score indicates an external attributional style.
- 2- *instability-stability*: the answer assessing an unstable attribution was scored with 2 points, while the answer assessing a stable attribution was scored with 1 point. A high score on this dimension indicates an unstable attributional style, while a low score shows a stable attributional style
- 3- *specificity – globality*: the answer assessing a specific attribution was scored with 2 points and the answer assessing a global attribution was

scored with 1 point. A high score on this dimension indicates a specific attributional style, while a low score indicates a global attributional style.

## Results

### Study 1- primary school subjects

#### *Hypothesis 1*

Hypothesis „The level of perceived self-efficacy is influenced by the type of feedback (positive or negative) and by the subjects' gender” is confirmed.

There is a significant effect of the type of feedback (positive/negative) on the results obtained for the dependent variable „level of perceived self-efficacy” ( $F(1,59)=14,42$ ,  $p<0,001$ ,  $p<0,05$ ). The subjects included in the positive feedback condition obtained significantly higher scores for self-efficacy ( $M=25,36$ ) compared to the subjects from the negative feedback condition ( $M=22,91$ ).

There is a significant effect of the subjects' gender on the result obtained for the dependent variable „level of perceived self-efficacy” ( $F(1,59)=12,43$ ,  $p=0,001$ ,  $p<0,05$ ). The male subjects obtained significantly higher self-efficacy scores ( $M=25,27$ ), compared to the female subjects ( $M=23,00$ ).

There is a significant effect of Gender X Type of feedback on the level of self-efficacy ( $F_{(1,59)}=5,66$ ,  $p=0,021$ ,  $p<0,05$ ). We noted significant differences between the male subjects and female subjects who received positive feedback in what the scores obtained for „perceived self-efficacy” are concerned with ( $t_{(22)}=3,86$ ,  $p=0,001$ ). Having received positive feedback, the male subjects perceived their self-efficacy higher ( $M=27,27$ ), compared to the female subjects ( $M=23,46$ ). There were no significant differences between the male and female subjects who received negative feedback concerning their obtained scores for „self-efficacy” ( $t_{(34)}=0,89$ ,  $p=0,376$ ).

Significant differences for the levels of self-efficacy appear between male subjects who had positive feedback and those who had negative feedback ( $t_{(23)}=5,02$ ,  $p<0,001$ ). The male subjects placed in the „positive feedback” condition have significantly higher scores for the „self-efficacy” variable ( $M=27,27$ ), compared to the male subjects from the negative feedback condition ( $M=23,28$ ). There are no significant differences between the female subjects who received positive feedback and those who received negative feedback ( $t_{(33)}=0,97$ ,  $p=0,33$ ).

#### *Hypothesis 2*

Hypothesis „Attributional style (internality-externality, instability-stability, specificity- globality) is influenced by the type of feedback (positive/negative) and by the subjects' gender” was not confirmed.

Anova Multivariate indicated the following results, based on the three dimensions of the „attributional style” variable.

Table 3: *Statistics for the effect of the gender on the three dimensions of attribution style*

Attributional style dimension	F	p	M male	M female
internality-externality	3,29	0,087	11,03	11,30
instability-stability	3,91	0,053	11,35	12,33
specificity- globality	17,65	<0,001	13,48	10,87

There is a significant effect of the gender on the specificity -globality dimension of the attributional style, that the male subjects having better results for this dimension, which means that male subjects do significantly more specific attributions compared to the female subjects.

Table 4: *Statistics for the effect of feedback on the three dimensions of attributional style*

Attributional style dimension	F	p	M success	M failure
internality/externality	2,34	0,132	11,40	11,89
instability/stability	2,10	0,159	12,19	11,44
specificity/ globality	1,43	0,236	12,55	11,80

There is no main effect of the type of feedback variable on the three dimensions of the attributional style. There is no effect of Gender X Type of feedback (positive/negative) on the attributional style.

Table 5: *Statistics for the effect of Gender X Type of feedback (positive/negative) on the attributional style*

Attributional style dimension	F	P
internality/externality	0,05	0,822
instability/stability	0,28	0,595
specificity/globality	0,04	0,830

### **Hypothesis 3**

Hypothesis *The level of perceived self-efficacy is influenced by the type of feedback (positive/negative) and by the time of measurement (pre-test/post-test)* is confirmed.

The Repeated Measures ANOVA identified an interaction effect of Type of feedback (positive/negative) X Time of measurement (pre-test/post-test) on the results obtained for the self-efficacy ( $F(1,58)=45,69$ ,  $p<0,001$ ,  $p<0,05$ ). There are significant differences between the pre-test and post-test results obtained in the positive feedback condition ( $t(23)=-6,51$ ,  $p<0,001$ ). The pre-test scores for self-

efficacy in the positive feedback condition ( $M=21,91$ ) were significantly lower than the post-test scores in the same condition ( $M=25,20$ ).

Significant differences appear between the pre-test and post-test results for self-efficacy in the negative feedback condition ( $t(35)=-4,37$ ,  $p<0,001$ ). The pre-test scores for self-efficacy in the negative feedback condition ( $M=25,77$ ) are significantly higher compared to post-test scores of the same variable in the same condition ( $M=22,83$ ).

There are also significant differences between the post-test scores depending on the type of feedback (positive/negative) ( $t(58)=3,35$ ,  $p<0,001$ ). In this time of measurement of the level of self-efficacy, subjects placed in the positive feedback condition have significantly higher levels of the variable ( $M=25,20$ ) than the subjects from the negative feedback condition ( $M=22,83$ ).

#### ***Hypothesis 4***

Hypothesis *The attributional style (internality-externality, instability-stability, specificity- globality) is influenced by the type of feedback (positive/negative) and by the time of measurement (pre-test/ post-test)*” was partially confirmed. An interaction effect of Type of feedback X Time of measurement on the instability-stability dimension of the attributional style ( $F(1,58)=7,21$ ,  $p=0,009$ ,  $p<0,05$ ).

There are significant differences between the scores for the stability-instability dimension of the attributional style depending on the time of the measurement ( $t(23)=-3,14$ ,  $p=0,004$ ,  $p<0,05$ ). The subjects in the positive feedback condition have significantly lower pre-test scores in what the level of unstable attributions is concerned ( $M=11,37$ ) compared to post-test scores ( $M=12,25$ ).

In summary, we noticed differences concerning the level of perceived self-efficacy and the orientation of some dimensions of the attributional style, depending on the participants’ gender and on the type of feedback (positive or negative) they received. Boys obtained significantly higher scores for the perceived self-efficacy variable compared to girls. We also underline the fact that boys do have better scores of self-efficacy after the experimental manipulation, when they are placed in the positive feedback condition, compared to girls in the same condition. This result shows that having educational success is more important for boys than for girls.

The higher level of self-efficacy of those subjects who received positive feedback could be explained by the fact that one of the sources of the perceived self-efficacy is the exact achievement of positive results in a certain area. The performance situations, especially when there is genuine success or failure, are the most powerful information sources regarding personal efficacy. Success in a task or behavior, the obvious ability reinforce the expectancies of self-efficacy for that task. The perception of failure reduces the expectancies of self-efficacy. An individual who tried to solve an exercise and failed will probably doubt his/her capacity of solving similar exercises in the future.

The vicarious experiences (observational learning, imitation, modeling) also have an influence on the personal efficacy expectancies: one observes the others' behavior, then uses this information in order to build expectancies about one's own behavior. The effects of vicarious experiences depend upon the similarity between the subject and the model, the number and the variety of models, etc. The vicarious experiences have a lower effect on the expectancies about self-efficacy than direct personal experiences.

Self-efficacy is equally affected by the negative and positive levels of feedback from the following: in the positive feedback condition the level of post-test self-efficacy rises, while in the negative feedback condition a decrease of self-efficacy levels is indicated. The experimental manipulation was effective, the results indicating significant differences between the pre-test scores of self-efficacy and the post-test scores of the same variable.

In what the effect of the experimental manipulation on the attributional style is concerned we noticed that significant differences appeared on the instability-stability dimension: subjects included in the positive feedback condition had more stable attributions than the subjects in the negative feedback condition.

## **Study 2: middle school subjects**

### ***Hypothesis 1***

Hypothesis „*The level of perceived self-efficacy is influenced by the type of feedback (positive or negative) and by the subjects' gender*” was not confirmed by the data.

Anova Univariate was applied in order to test this hypothesis, with the following results: there is a main effect of the gender on the perceived self-efficacy ( $F(1,59)=4,43$ ,  $p=0,04$ ,  $p<0,05$ ). The male subjects have significantly higher scores on self-efficacy ( $M=24,66$ ) compared to those obtained by the female subjects ( $M=22,68$ ).

There is no main effect of the experimental condition (type of feedback) on the level of self-efficacy ( $F(1,59)=0,50$ ,  $p=0,48$ ,  $p>0,05$ ).

There is no interaction effect of the Gender X Experimental condition on the level of self-efficacy ( $F(3,41)=3,41$ ,  $p=0,070$ ,  $p>0,05$ ).

### ***Hypothesis 2***

Hypothesis „*Attributional style (internality-externality, instability-stability, specificity- globality) is influenced by the type of feedback (positive/negative) and by the subjects' gender*” was not confirmed, the data analysis showed only a main effect of the gender on the three dimensions of the attributional style (internality-externality, instability-stability, specificity- globality).

ANOVA Multivariate indicated the following results, analysed by the three dimensions of the attributional style.

Table 6: *Statistics of the main effect of gender on the three dimensions of the attributional style*

Attributional style dimension	F	p	M masculine	M feminine
internality-externality	4,96	0,030	12,37	11,69
instability-stability	17,43	<0,001	11,13	12,85
specificity- globality	8,72	0,05	11,39	13,03

A main effect of gender appears on the three dimensions of the attributional style. Thus, boys obtain significantly higher scores on the internality-externality dimension compared to girls, while girls obtain significantly higher scores on the instability-stability and specificity-globality dimensions. Boys tend to do more internal, stable and global attributions compared to girls.

Table 7: *Statistics for the effect of the type of feedback on the three dimensions of the attributional style*

Attributional style dimension	F	p	M positive feedback	Media negative feedback
internality-externality	0,124	0,726	11,98	12,08
instability-stability	0,624	0,433	11,83	12,15
specificity- globality	13,30	0,001	11,19	13,22

A main effect of the type of feedback (positive/negative) does not appear on the internality-externality and instability-stability dimensions, but only on the specificity-globality dimension, meaning that the subjects placed in the negative condition feedback do specific attributions to a greater extent compared to the subjects in the positive feedback condition.

An interaction effect of the Gender X Type of feedback (positive/negative) appears on the attributional style.

Table 8: *Statistics of the interaction effect of Gender X Type of feedback on the three dimensions of the attributional style*

Attributional style dimensions	F	p
internality-externality	0,033	0,857
instability-stability	1,309	0,247
specificity- globality	2,110	0,152

Whether the subjects received positive or negative feedback, no modification appeared in what concerned the attributional style, which usually is built stable enough not to be influenced by one single task that could also be irrelevant to the subjects' domains of interest at this age.

### **Hypothesis 3**

Hypothesis *The level of perceived self-efficacy is influenced by the type of feedback (positive/negative) and by the time of the measurement (pre-test/post-test)* was not confirmed by the data.

Repeated Measures Anova revealed the following results:

A main effect of the type of feedback (positive/negative) on the results obtained for self-efficacy does not appear ( $F(1,58)=0,40$ ,  $p=0,528$ ,  $p>0,05$ ). Instead, we noticed a main effect of the time of measurement on the level of perceived self-efficacy ( $F(1,58)=10,65$ ,  $p=0,02$ ,  $p<0,05$ ). In the post-test moment of measurement the subjects obtained significantly lower scores (23,95) than in the pre-test moment (25,22).

An interaction effect of Type of feedback (positive/negative) X Time of measurement on the results of self-efficacy does not appear ( $F(1,58)=2,66$ ,  $p=0,108$ ,  $p>0,05$ ).

### **Hypothesis 4**

Hypothesis *The attributional style (internality-externality, instability-stability, specificity- globality) is influenced by the type of feedback (positive/negative) and by the time of the measurement (pre-test/ post-test)* was partially confirmed. There is an effect of Type of feedback (positive/negative) X Time of measurement (pre-test/post-test) on the specificity-globality dimension of the attributional style ( $F(1,58)=5,38$ ,  $p=0,024$ ,  $p<0,05$ ).

Significant differences appear between the scores obtained on the specificity-globality dimension of the attributional style for the subject in the positive feedback condition depending on the time of measurement. ( $t(35)=3,24$ ,  $p=0,003$ ,  $p<0,05$ ). Subjects placed in the positive feedback condition have significantly higher pre-test scores on the level of specific attributions ( $M=11,63$ ) compared to their post-test scores ( $M=11,08$ ).

Significant differences appear between the post-test scores obtained on the specificity-globality dimension of the attributional style ( $t(58)=-3,22$ ,  $p=0,002$ ,  $p<0,05$ ). Thus, subjects placed in the negative feedback condition have significantly higher scores on the specificity-globablity dimension ( $M=12,91$ ), compared to their pre-test scores ( $M=11,08$ ).

### **Discussion**

As a general conclusion on the primary school study we generated evidence that the male participants had higher score of perceived self-efficacy compared to the female participants. The same tendency was indicated by the middle school study. For boys, the effect of success in a task is more important. These results could be explained by the differences in the socialization process of girls and boys, which are notable even at this age. While traditional social norms

encourage the boys' competitive behavior, the girls are faced, especially from an ethological perspective, with less competitive situations and social tasks.

Thus, successfully completing a task states the social confirmation of the boys' abilities and in most situations is an indicator of their social value. The need for social value, the tendency toward competition make men believe that success has greater influence on them. The study states that the effects of failure are the same for boys and girls, a fact that indicates the importance and power of failure on one's own perceptions of self-efficacy. Success has a greater importance for boys, but failure has the same effect on boys and girls.

Individuals with high level of self-efficacy trust their personal skills to gain success in a task, this impression having been nurtured in time either by others' opinions or by feedback of their own experience. Boys are encouraged to experiment with as many situations as they can, are confronted with various stimuli, gaining a more complex life experience, a fact that has consequences on one's belief that an individual can organize and execute a certain course of action or can obtain certain results in a specific task.

In contrast with the primary school study, the case of the second study, in which the participants were middle school students, the type of feedback (positive/negative) had no main effect on the perceived self-efficacy. This result could be explained by the fact that the proposed task might not have relevance for the middle school students. While for the primary school students the school tasks are the main concern and for them obtaining feedback has a greater impact, the middle school students have a variety of concerns during this time of their life: the influence of the social context becomes more important, attending to social activities outside school takes a greater amount of time, the students are focused on their group of friends, and the importance of school tasks is taken over by other social activities.

Primary school boys tend to do more specific attributions (we explained the results based on external temporary factors like chance, nature and difficulty of task, bad luck, on others' influence) to protect their self-esteem and self-efficacy levels in case of failure ( taking into consideration the previous results that underlined the fact that boys are influenced to a greater extent by poor results). Thus, boys ensure the psychological comfort in case they are confronted with a failure (negative feedback), depending on the attribution they made ( a specific attribution lowers the risk that the general level of self-esteem or self-efficacy is affected).

Middle school boys also tend to do internal, stable and global attributions to a greater extent compared to girls. The attribution process is a sense making process. The representational world of the subject is perceived as a structured, organized, balanced, consistent whole, and the individual operates various cognitive reconstructions through active data processing and explication seeking. These attributions made by school boys help them interpret the social reality so that they are able to protect their self-esteem and also react according to the social

requirements. For example, if the student attributes his/her failure to their own uncontrollable inability, they will feel shame, embarrassment, and will decrease his/her effort and their performance will also decrease. When the student attributes his/her failure to low controllable effort, they will feel especially responsible and can intensify their learning effort and improve performance.

The subjects that did not complete the task (negative feedback condition) tend to do more specific attributions. Thus, they protect their level of perceived self-efficacy when attributing the negative feedback to situational and specific causes. When they are not motivated enough, individuals do not seek extra information, especially if they find a simple explanation for a situation or behavior. Some causes are considered sufficient to explain some behavior, while others do not offer enough information. A poor result can be based on many factors, but high performance assumes the existence of some abilities, not only contextual factors. Primary school boys do more specific attributions than girls, but the other two dimensions do not differentiate boys and girls. Beauvois (1994) states that internal causal attributions (behavior is based on internal qualities like skills, personality type, effort, ability etc) are more socially desirable than external attributions. In this case we can assume the desirability effect, but also the gender role pressure on boys. In what the effect of the experimental manipulation on the attributional style is concerned, significant differences were noted on the stability-instability dimension. Subjects placed in the positive feedback condition made more stable attributions compared to the ones placed in the negative feedback condition. The limited appearance of these differences could be psychologically explained by the fact that the attributional style is constructed in time, based on various experiences as well as on long-term influence of certain factors. In this present study a specific situation does not have the power to change the direction of the attributional style because the task has a contextual quality. Individuals with a high level of self-efficacy have firm and stable opinions about themselves, because these are not context dependent, talk about themselves in a firm, coherent and positive manner; they risk exaggerating their certainties and simplifications; they act efficiently, they only take themselves into consideration when making a decision, persist in their decisions, despite difficulties; they can be great innovators, but sometimes they are too sensitive when it comes to their short-term interests. The failure does not leave emotional traces in long-term on these individuals. They can confront the critics about their weak points, they do not feel constrained to justify their failure and neither do they feel rejected if they are criticized, but they may not take into consideration the critic.

Individuals who face failure (negative feedback) use unstable attributions to protect a positive self-image, to control on a perceptive level the events and the modes of reaction. Some causes are considered sufficient, for explaining a behavior, while others do not offer enough information. A poor result can be explained by many factors, but a good performance assumes the existence of some ability, not only contextual factors.

Different results for boys and girls concerning the level of perceived self-efficacy could be explained by the social learning theory, which is based on a distinction between group and interpersonal processes. Based on social identity one makes sense of what one is, and this identity places an individual in the network of social relations. Boys and girls benefit from different socialization processes. The traditional gender roles that postulate certain characteristic activities for a man and for a woman and the distribution of boys and girls in different activities develop the differences in perception, beliefs and certitudes.

Boys are encouraged to involve themselves in many activities, gain more positive results that raise their level of self-esteem. This makes them feel more capable and gain greater faith in their own strengths based on their involvement in various activities and on received feedback. The feeling of self trust anticipates the apparition and consolidation of self-esteem and perceived self-efficacy. All these influence the identity.

The results obtained from this study could be also explained by various theories that concern relations, roles and educational groups, as a fundamental and ramified social area (Hatos, 2006; Stănciulescu, 1996). The theory of social reproduction regards education as a process of transmitting and maintaining social inequities (Bourdieu, 1990), including psychological constructs of boys and girls concerning self-esteem, perceived self-efficacy and reactions toward failure as well as success in a task. Theories of social capital analyse the role of social relations in school, beside information, in personal and social development. Constructivist and poststructuralist theories regard school and educational processes as modalities to negotiate social practices and construct social identities (Peters and Burbules, 2004; Berger and Luckmann, 2008). The social identity is the result of the individual's performance to involve him/herself in the social life, being also a result of the process of primary socialization and the base of self-image which is itself strongly related to self-esteem.

### **Limits of this study and further research directions**

It is possible that the task to solve a puzzle did not raise the interest of all the participants in this study, was not relevant to their areas of interest, and that means the impact and relevance of the task influenced the results of this study. Depending on showed interest, it is possible that the subjects found the completion of the task more or less important and, accordingly, these results may or may not count for the person's self-esteem or self-efficacy in a certain area.

The questionnaire that assessed the three-dimensional attributional style (internality-externality, instability-stability, specificity-globality) included 24 items (not 48 items as used in the questionnaire by Seligman) and it is possible that this reduction of the number of items influenced the results, in the way that a larger number of items offered a more exact and basic of the attributional style.

In this study the post-test evaluation occurred after three days from the initial evaluation and from the completion of the experimental manipulation. During this

period of time certain events could have happened and influenced the subjects' self-perceptions. Some participants might have been familiar with this kind of task, which had offered an advantage in solving it.

Solving the puzzle also involved the training of spatial orientation that is present in each participant in different amounts. These individual differences could have influenced the results of the study.

Further investigations on the impact of success or failure in a task could consider a larger number of variables, like those related to the personality structure (temperament, motivational persistency), to social factors (background, social status, level of expectancies, gender roles promoted by the family, assumed and practiced social roles, social models to which the participant was exposed etc), and the experimental manipulation could concern strictly a school task. A longitudinal study that would study the fluctuation of the levels of self-esteem, of self-efficacy and attributional style during major events in the individual's life would offer more data on these psychological structures. The analysis of main life events and their impact on self-esteem, perceived self-efficacy and the foundation of the attributional style would present great interest and help to control the negative and dangerous influences that could affect the individual's balanced bio-psycho-social development as much as possible.

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