Changes in the Self-regulation of Learning Experience After Negative Self-evaluation of the Essay Writing Task

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Abstract

This is a longitudinal study relating to changes in self-regulated learning in the field of writing. It included 199 high-school students who wrote an essay and filled out scales, including the components of self-regulation which dealt with failure in school tasks. 32 students were unsuccessful or unhappy with the results when having to repeat essay writing task participated in the second wave of this longitudinal study. During the second attempt, students lowered their evaluation of achievement in writing tasks, their sense of control, feelings of relief and expectation of success were increased. They reduced the use of adaptive learning and writing strategies and increased the use of the external strategy “Seeking and writing by model”. The difference between the results in the first and second wave of research, for all the scales used and confidence in success have been calculated in order to determine the correlation between the established changes in the self-regulation of learning and the field of writing. The increase in the strategies of “Coping focused on the problem” is associated with an increase in positive activating emotions and increase in the evaluation of achievement in writing tasks. A greater use of defensive strategies in order to cope with failure also led to an increase in positive emotions, evaluation, sense of achievement, and the use of the “Planning and self-direction adaptive writing strategy”.

Keywords: self-regulated learning, school failure, coping with school failure, academic emotions, writing strategies.

1. Introduction

1.1 Self-regulated learning

Self-regulated learning refers to the processes, internal and/or transactional, which enable the individual to control his/her activities when they are directed toward certain goals over an extended time period and circumstances or contexts subject to change (Karoly, 1993). A person’s ability to deliberate the form and direction of an activity, followed by self-motivation toward action, self-reflection regarding one’s own actions and general sense of self, enable an active role in development, adjustment and improvement (Sorić, 2014). Self-regulation in the field of learning simultaneously takes place in several areas: cognitive and metacognitive, motivational and emotional, behavioral and contextual. Thus the self-regulation of learning becomes a central element of the dynamic model of the continuous acquisition of new knowledge and skills. It is a
A constructive process that allows researchers to describe the different components of successful learning, to explain the reciprocal and repetitive interactions which occur between and within these components, and to link learning and achievement directly to the individual, to his/her goals, motivation, desires and emotions (Boekaerts, 1999). The self-regulation of learning is defined as an active, constructive process in which students set their learning objectives, and then attempt to monitor, regulate and control cognition, motivation and behaviour, guided and limited by both their goals and environment. In order to understand these complex processes of self-regulation in the process of learning, linear models are unacceptable, and it is necessary to postulate models that assume a dynamic and reciprocal determinism (Boekaerts & Corno, 2005; Karoly et al., 2005).

1.2 Self-regulation in writing as the creation of a text

Writing as the creation of a text is a very complex and cognitively demanding activity, as it represents a dynamic set of cognitive processes in which both the higher and lower levels are involved, including the very important use of the cognitive strategies of writing. Other than these important cognitive processes, creative writing also involves the simultaneous use of metacognitive, motivational, emotional and behavioural processes, as well as the control environment in which writing takes place. The modern social-cognitive model of self-regulation in writing by Zimmerman and Risenberg (1997) assumes that the creation of text writing takes place in three cyclical phases: (1) setting goals for writing, task analysis and the definition of motivational beliefs (self-efficacy, outcome expectations, intrinsic interest, evaluation of writing and goal orientation), (2) volitional control performance writing (including self-control and self-perception) and (3) self-reflection that involves processes which occur after effort has been exerted in performance (self-assessment, proper reaction), as well as the feedback affecting the first phase. The interrelationship between the components of the self-regulation of learning arising from the phased model of self-regulated learning in the field of writing is also an application of the possibilities of the Zimmerman model of self-regulated learning (2000) in the process of creative writing. Although self-regulation plays an important role in the complex tasks of creative writing, as confirmed by numerous studies (Graham & Harris, 2000; Nikčević-Milković, 2012; Scardamalia & Bereiter, 1985; Zimmerman & Riesenber, 1997), it is a complex human activity dependent on inspiration and the experience and creativity of the individual, which reduces the contribution of self-regulation of success in the process of writing.

1.3 The aim of the study

Taking into account this dynamic paradigm of self-regulated learning, a research study has been carried out in an “in-situ classroom study” in order to examine the changes in the measurement variables (self-regulated learning and writing) during the first and second writing essays for a group of students who were not satisfied with writing achievement. Also, we measured correlation of coping strategies with school failure and changes in emotions, cognitive assessments, learning strategies and strategies of writing and in an objective writing achievement. The motivation for this study was the lack of research on changes in the guidelines and strategies for the self-regulation of learning and coping with the experience of failure.

2. Methods

The approach of this research had a longitudinal perspective in several phases over a certain time period involving the same research participants. This research consisted of two main parts: (1) for all participants (N = 199; male 71 (35.86 %), female 127 (64.14 %); the average age is
18.35; SD=0.667) and (2) for participants who in the first part had negative self-evaluations of their achievement on the essay writing task (N = 32). This research represents a simulated situation of writing an essay test for the State Matura Examination. Research consisted of four stages: (1) before writing, (2) during the time of writing, (3) immediately after writing and (4) after receiving feedback on a written essay. The study participants were 3rd grade students from four high schools in Croatia (N = 231): Gospić (N = 59; 29.79 %), Otočac (N = 19; 9.59 %), Ogulin (N = 48; 23.73 %) and ‘Vladimir Nazor’ Zadar (N = 73; 36.86 %) but only 199 students had successfully passed all four stages of research. All participants agreed to take part in this research voluntarily and remained anonymous, yet all were coded for the purpose of identifying data from the same participant in the different waves of this longitudinal study. In the second part of the study, we were interested in unsuccessful/dissatisfied students faced with failure, the changes they experienced in the individual components of self-regulated learning, their coping with school failure and the effects this had on their results in such a complex task. Approval for this survey was obtained from the Ethics Committee for research of the Department of Psychology of the University of Zagreb and the Croatian Ministry of Science. In the area of self-regulation is the lack of research on changes in the guidelines and strategies for the self-regulation of learning and coping with the experience of failure what was the motivation for research.

2.1 Criteria variables – Success in writing

Success in writing was expressed by two measures: (1) Objective measures of achievement: the number of points on a written examination obtained by the two assessors based on the criteria for the State Matura Examination and (2) Subjective measures of achievement: students’ satisfaction of success on the writing task was tested by one item “Achievement on a task I am satisfied or not satisfied”.

Table 1. Results of objective and subjective measures of achievement essay

|                      | Minimum | Maksimum | M   | SD    | Symetry  | Kurtoza  |
|----------------------|---------|----------|-----|-------|----------|----------|
| Score of 1st evaluator | 10      | 38       | 29.22 | 4.150 | -1.16    | 3.88     |
| Score of 2nd evaluator | 10      | 38       | 29.61 | 4.556 | -1.39    | 3.30     |
| Score - average      | 10.00   | 38.00    | 29.41 | 4.266 | -1.35    | 3.83     |
| Score - average Exp2 | 100.00  | 1444.00  | 883.30 | 229.551 | -5.1    | .92      |
| The satisfaction of achievement | 0   | 1 | .82 | (82 % | Yes | .387 |

Essays are evaluated by two experts. The relationship between these estimates is extremely high (r = 0.92). The reliability assessment (inter-rate reliability) measured by the intra-class correlation coefficient is also very high (by use of an assessor: 0.91; for the use of the average estimate: 0.96). The evaluation results are extremely negative asymmetrical indicating the grouping of a large number of results in the high values of the scale assess with only a small number of low estimate. The average results of the number of points for written essays test is
29.41. This is a result of the estimated high quality of the written essay test by students as a group. Subjective measures of satisfaction achievement show that the majority of students (82%) are satisfied with the achievement.

2.2 Pilot study

In this part of study two new measuring instruments were designed: (1) A Questionnaire of Self-regulated Learning in the Area of Writing and (2) A Questionnaire of Writing Strategies. The first questionnaire measured academic self-regulation in the area of writing in five subscales: 1) Evaluation and feedback (α = 0.86), 2) Organizing and transforming (α = 0.81), 3) Removing confounding factors (α = 0.76), 4) Planning activities (α = 0.87), 5) Responsibility (α = 0.81). The second questionnaire measured writing strategies in three subscales: 1) Planning and self-direction (α = 0.86), 2) Checking and correcting (α = 0.85), 3) Seeking and writing by model (α = 0.77) (Nikčević-Milković, 2012; Nikčević-Milković & Lončarić, 2020a; Nikčević-Milković & Lončarić, 2020b).

2.3 Primary research

The Test Emotions Questionnaire (TEQ, Pekrun et al., 2004) examined emotions that students typically experience before, during and after a test task of writing. It consists of eight scales which measure one test discrete emotion: Joy (α = 0.70), Hope (α = 0.75), Pride (α = 0.82), Relief (α = 0.86), Anger (α = 0.73), Shame (α = 0.82), Anxiety (α = 0.90) and Helplessness (α = 0.85) (Nikčević-Milković, 2012). The particles within the individual scale measure the affective, cognitive, physiological and motivational components of emotions. Pekrun (2004) differentiate eight emotions, divided into four positive emotions (joy, hope and pride) and four negative emotions (anger, anxiety, helplessness, shame). He claimed to have theoretical classification with respect to two dimensions: valence (positive/negative) and activation (activation / deactivation). The combination of dimensions resulted with four categories of emotion: (1) positive activating (joy, hope and pride); (2) positive deactivating (relief); (3) negative activating (anger, anxiety, shame) and (4) negative deactivating (helplessness).

2.4 Expectation of success

The expectation of success in the task of writing was examined using two items: (1) I expect to be: a) successful and b) unsuccessful; (2) I expect to achieve a grade: 1 2 3 4 5.

2.5 Evaluation of achievement in writing scale

The Questionnaire of Self-esteem, Goal orientation, Perceived control and Evaluation (Niemivirta, 1999) in the field of math (Buric, 2010) has been adapted for the domain of writing in order to measure belief concerning the cognitive evaluation of achieving success in writing tasks (α = 0.78) (Nikčević-Milković, 2012).

2.6 Perceived Academic Control Scale in the task of writing

The cognitive assessment of control over the achievement in the writing task was assessed by the Perceived Academic Control Scale (Perry et al., 2001), adapted to the domain of writing (α = 0.78) (Nikčević-Milković, 2012).
2.7 Self-efficacy in the self-regulation of writing scale

The efficacy in the self-regulation of writing was examined by the subscale Self-efficacy for Learning and Performance from Motivated Strategies for Learning Questionnaire (MSLQ, Pintrich et al., 1993), adapted to the domain of writing (α = 0.80) (Nikčević-Milković, 2012).

2.8 Academic Coping Strategies Scales

Academic Coping Strategies Scales (Loncaric, 2008) represents a self-assessment efforts of students to deal with school failure and refers to the strategy of self-regulation in the learning process, which are activated after experiencing failure. It consists of eight subscales grouped into three components: (1) Problem-Focused Coping (actively solving problems, thinking about the problem), (2) Emotion-Protective Disengagement (avoidance, imagination, distraction), (3) Ego-Protective Disengagement (giving up and reinterpretation, ignoring the problem, ridiculing problems) (α = 0.75) (Lončarić, 2014).

3. Results

Table 2. Changes in the measurement variables during the first and second writing essays for a group of students who were not satisfied with achievement (N = 32)

|                      | M (A) | SD (A) | M (B) | SD (B) | Δ M (B-A) |
|----------------------|-------|--------|-------|--------|-----------|
| **EMOTIONS**         |       |        |       |        |           |
| The positive activating emotions (joy, hope and pride) | 3.02  | .469   | 3.06  | .686   | .062      |
| The positive deactivating emotions (relief)          | 2.77  | .802   | 3.00  | .981   | .29*      |
| Negative activating emotions (anger, anxiety, shame) | 2.90  | .749   | 2.73  | .666   | -0.15     |
| The negative deactivating emotions (helplessness)    | 2.63  | .878   | 2.49  | .744   | -0.16     |
| **COGNITIVE ASSESSMENT**                               |       |        |       |        |           |
| The expectation of success (0= No, 1=Yes)             | -0.74 | .445   | 1.00  | (100% Yes) | .26*      |
| Evaluation of Achievement in Writing Scale            | 21.71 | 4.606  | 20.97 | 4.461  | -0.61*    |
| Perceived Academic Control Scale in the Task of Writing| 27.55 | 4.566  | 27.81 | 4.789  | .26*      |
| Self-efficacy in the Self-regulation of Writing Scale | 26.26 | 3.577  | 26.09 | 4.380  | .07       |
| **STRATEGY OF LEARNING**                              |       |        |       |        |           |
| Evaluation and feedback                               | 2.99  | .898   | 2.82  | .948   | -.17*     |
| Organizing and transforming                            | 3.06  | .852   | 3.11  | .849   | .03       |
| Removing confounding factors                           | 3.52  | .944   | 3.20  | .890   | -.28*     |
| Planning activities                                    | 2.94  | 1.109  | 2.86  | 1.144  | -.03      |
| Responsibility                                         | 3.49  | .864   | 3.34  | .860   | -.12*     |
| **STRATEGY OF WRITING**                                |       |        |       |        |           |
| Planning and self-direction                            | 3.17  | .790   | 3.23  | .756   | .04       |
| Checking and correcting                                | 4.05  | .701   | 3.73  | .718   | -.31*     |
| Seeking and writing by model                           | 2.35  | .828   | 2.51  | .792   | .20*      |
| **ACHIEVEMENT**                                       |       |        |       |        |           |
| Score– average                                        | 25.73 | 3.750  | 27.25 | 3.522  | 1.40*     |
Table 2 shows that the biggest change between the first and second attempt at writing an essay test by students who were not satisfied with their result or those who were unsuccessful, could be found on the positive deactivation of the emotion of relief. Relief is greater after the second attempt. To a lesser extent emotions are decreased or negative (activating and deactivating) after the second attempt. Regarding cognitive assessment, after the second attempt, there was an increased expectation of success and a perceived control over achievement. The biggest negative change occurred in the evaluation of achievement (the difference is -0.61). After the second attempt, these students estimated that they used self-regulated learning strategies: “Evaluation and feedback” and “Removing confounding factors”, to a lesser extent self-regulated strategy “Responsibility” and writing strategy “Checking and correcting”. They more used writing strategy “Seeking and writing by model”. Objective achievement in these students saw a slight increase after the second attempt in writing an essay.

Table 3. Correlation of coping strategies with school failure and changes in emotions, cognitive assessments, learning strategies and strategies of writing and in an objective achievement

| Academic Coping Strategies                        | Δ M (B-A) | Problem-Focused Coping | Emotion-Protective Disengagement | Ego-Protective Disengagement |
|----------------------------------------------------|-----------|------------------------|----------------------------------|-----------------------------|
| **EMOTIONS**                                       |           |                        |                                  |                             |
| The positive activating emotions (joy, hope and pride) |           | .52*                   | .54*                             | .62*                        |
| The positive deactivating emotions (relief)        |           | .05                    | .46*                             | .81*                        |
| Negative activating emotions (anger, anxiety, shame) |           | .05                    | .01                              | .15                         |
| The negative deactivating emotions (helplessness)  |           | .22                    | .02                              | .16                         |
| **COGNITIVE ASSESSMENT**                           |           |                        |                                  |                             |
| Evaluation of Achievement in Writing               |           | .41*                   | .48*                             | .56*                        |
| Self-efficacy of Self-regulation in Writing         |           | .27                    | .25                              | .10                         |
| Perceived Academic Control in the Task of Writing   |           | .18                    | .34                              | .09                         |
| **STRATEGY OF LEARNING**                           |           |                        |                                  |                             |
| Evaluation and feedback                            |           | .05                    | -.13                             | -.24                        |
| Organizing and transforming                         |           | .16                    | .25                              | .14                         |
| Removing confounding factors                        |           | .03                    | .19                              | .13                         |
| Planning activities                                 |           | .05                    | .05                              | .04                         |
| Responsibility                                     |           | .12                    | .32                              | .29                         |
| **STRATEGY OF WRITING**                            |           |                        |                                  |                             |
| Planning and self-direction                         |           | .26                    | .46*                             | .41*                        |
| Checking and correcting                             |           | -.05                   | -.06                             | .04                         |
| Seeking and writing by model                        |           | .08                    | .34                              | .34                         |
| **ACHIEVEMENT**                                    |           |                        |                                  |                             |
| Score - average                                    |           | -.10                   | -.19                             | -.23                        |

N=32; p<0.05 for all correlations exceeding than │0.36│

The greater use of “Problem-Focused Coping” is associated with a greater increase in the positive activating emotions and evaluation of achievement. The greater use of “Emotion-Protective Disengagement” directed at alleviating negative emotions, as well as the use of “Ego-Protective Disengagement”, is associated with a greater positive change in positive activating and
positive deactivating emotions (relief), the evaluation of achievement and the use of “Planning
and self-direction” writing strategy.

4. Discussion

In an effort to grasp the dynamics and reciprocal determinism of all involved components in the process of the self-regulation of learning in a natural situation, the purpose of testing the students' task of writing during the first and second attempt in writing essays for a group of students who were not satisfied with writing achievement. These students wanted to re-write the exam. The biggest change between the first and second attempt in writing test occurred in the positive deactivating emotion of relief. Relief was greater after the second attempt at the essay as the task was repeated and students knew what to encounter. To a lesser extent, decreased and negative activating and deactivating emotions after the attempt appeared for the same reason. Regarding cognitive assessment, after the second attempt the expectation of success and the perceived control over its attainment increased, due to a familiarity with the situation. The biggest negative change occurred in the evaluation of achievement (the difference is -.61). During the first attempt, these students evaluated their achievement in writing more highly (as something important for their competence and education) that was reduced after receiving the results with which they were not satisfied and below their expectations. Some students are defensive-oriented, that is, they try to maintain self-esteem after failing to reduce their evaluation of the task. In another attempt to write the task, students used less of the following self-regulated learning strategies: “Evaluation and feedback”, “Removing confounding factors” and “Responsibility”. Concerning writing strategies in the second attempt, students used the less adaptive “Checking and correcting” strategy which, according to some authors, is a key strategy for the quality of written texts (Neuman & Dickinson, 2003; MacArthur et al., 2004), while several more used the less adaptive, yet more external „Seeking and writing by model” strategy. Thus, the students practice writing essays on a “proven model” and seek help from others as external factors. Writing is a very complex language activity that cannot be completed in such a brief time period, yet the students think “a little time is not an opportunity for learning”. Therefore they resort to external factors that will improve achievement in the short term, and seek help from more competent authors (teacher, some students) and write according to “a model”, which, in the Croatian education system, is imposed as an adaptive strategy that has led to the now current good results. The objective achievement expressed in points in these students slightly increased after the second attempt.

In the second part of the research we tested how all this relates to dealing with school failure? The use of adaptive “Problem-Focused Coping” strategy is associated with greater a positive change in the positive activating emotions and evaluation of achievement. The greater use of the “Emotion-Protective Disengagement” strategy, aimed at alleviating negative emotions, as well as the use “Ego-Protective Disengagement”, is associated with a greater positive change in the positive activating and positive deactivating emotion (relief), the evaluation of achievement and the use of adaptive “Planning and self-direction” writing strategy. The positive activating emotions are aimed at all three types of coping strategies: “Problem-Focused Coping”, “Emotion-Protective Disengagement” and “Ego-Protective Disengagement”. The positive deactivating emotion of relief is associated only with the implementation of “Emotion-Protective Disengagement” or “Ego-Protective Disengagement”. There is no change in negative emotions in coping strategies. As for the changes in cognitive assessments it was evident that students who increase their evaluation of the writing task will face failure when using “Problem-Focused Coping”, but will also protect themselves by a reduction of the negative emotions or the protection of their own self-esteem. On average, these students reduce their evaluation of these tasks, but those who task evaluate the more highly when faced with failure will focus on all three types of
coping. The efficacy of the self-regulation of writing is associated with the strategy of dealing with the failure of “Emotion-Protective Disengagement” and “Ego-Protective Disengagement”. Changes in self-regulated learning strategies were not associated with changes in the coping strategies dealing with failure. As for the changes in the strategies of writing, the greater use of the Planning and self-direction adaptive strategy is associated with a greater use of “Emotion-Protective Disengagement” and “Ego-Protective Disengagement”. These results confirm that the division of the components of the self-regulation of learning in a proactive and defensive form is justified (Lončarić, 2008; 2014). The form of the proactive self-regulation of learning implies a proactive strategy of learning, proactive coping (one focused on the problem), proactive motivational components (self-efficacy, motivational strategies to encourage the learning process, target orientation focused on teaching) and a justified proactive control (attribution focused on effort). Form defense self-regulated learning means learning defensive strategies (surface cognitive processing), defensive coping strategies (protecting emotion by distancing one’s self and protecting one’s ego by such distancing), defensive motivational components (test anxiety, motivational strategies to protect self-esteem, target orientation for performance and non-academic goals) and defense beliefs about control (attribution focused on skills or external factors). Students in cases of failure/success and discontent have a proactive form of self-regulation when learning in the face of the failure and are more likely to use adaptive strategies when focused on the problem, which leads to changes in positive activating emotions and the evaluation of achievement. Students with a defensive form of self-regulation when learning in the face of failure are directed to a reduction of their own negative emotions, and protect their self-esteem as well, resulting in a major change in positive activating emotions, the positive deactivating emotion of relief, and evaluation of achievement. The use of the highly adaptive “Planning and self-direction” writing strategy is also more prevalent in this case. Thus, these are two defensive strategies, including “Problem-Focused Coping”, and are adaptive (leading to more positive emotions, more relief, evaluated tasks more highly, and more use of the “Planning and self-direction” adaptive writing strategy). In the context of Croatian schools, “Emotion-Protective Disengagement” and “Ego-Protective Disengagement” are adaptive strategies (as the “Problem-Focused Coping” strategy), as can be seen in the results of this research. In addition to learning strategies as mediators in the research of the self-regulation of learning, strategies to cope with failure should be included, as they are often an integral part of a student’s academic experience. In a school that values discipline and haphazard memorizing, deep cognitive processing is not the only strategy that can lead students to success. Thus, students resort to defensive strategies and rote learning, which is adaptive in the current requirements in the context of contemporary Croatian education. The new curriculum reform in Croatia emphasizes just the opposite: intrinsic reading and writing, the creative self-regulation of learning through the cross-curricular theme of learning how to learn, rather than the regulation desired by many teachers which excludes creativity, innovation and critical thinking.

The main limitation of this study is that in, the second part of the study, the focus is on a small number of participants, so that we can talk only about the trends in these changes, and, for the most part, use methods of self-assessment in such complex learning tasks such as writing; a more appropriate and creative research method (one which combines both quantitative and qualitative methods, such as the method of thinking aloud or methods of tracing that capture automatic cognitive activities) is the ideal (Nikčević-Milko, 2012; Roncevic Zubković, 2013). Pintrich (2004) warns that instruments based on self-assessment cannot capture the relevant processes for micro-level analysis, which means that they cannot affect the current cognitive and motivational processes that students use as they learn, but affect the general and average propensity to use various self-regulatory processes (in macro level analysis). Therefore, the researchers focused on the use of qualitative methods that provide richer, more holistic descriptions which emphasize the social context, and do not represent within-person stability. Perry, Turner and Meyer (2006) also point out that many authors attempt to capture the dynamic
nature of self-regulation by measuring the components of self-regulation at successive time points, to capture relationships between the measured components from one time point to another, yet such research designs cannot explain how these components are developed or changed. Securing a multi-methodological approach in the future, as well as measures, procedures and instruments for such, would be of great assistance in order to better investigate and explain the unexplained aspects of the self-regulation of learning, especially in such complex tasks.

5. Conclusions

Unsuccessful and dissatisfied students who succeeded in the second attempt at the essay writing task on average had a largely increased feeling of relief. All of these students expected more success when repeating the writing test, deciding to undertake a second attempt which resulted in increased success in the task. Their evaluation of the writing task saw a decrease, whereas their sense of control over this task in the second attempt saw an increase. Self-regulated learning strategies in the second attempt decreased or remained the same, as well as writing strategies, except the external strategy “Seeking and writing by model” which are most prevalent. Students realize that they have too little time to change themselves by learning and that the best solution is to attain a successful model of writing. Unsuccessful/dissatisfied students who achieved success in the second attempt at writing focused on the protection of the ego by removing because they reduced their evaluation of the task and all other writing strategies except “Seeking and writing by model”. The “Emotion-Protective Disengagement” focused on alleviating negative emotions and “Ego-Protective Disengagement” used to cope with failure are also associated with an increase in the adaptive writing strategies “Planning and self-direction”. These two coping strategies, as well as “Problem-Focused Coping” strategy, are adaptive because they are associated with more positive emotions, more relief, a higher evaluation of tasks, and more use of the “Planning and self-direction” adaptive writing strategy. The justification of the division of components of self-regulation learning in a proactive and defensive form is a model which has been confirmed.

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