Effectiveness of Psycho-Behavioral Training Model on Health Promotion and Disease Prevention Behavior in Middle School Students

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ABSTRACT

This article addressed an appropriate way to promote good health behavior by presenting psycho-behavioral training to promote healthy psychological characteristics which are causes of health promotion and disease prevention behavior. The main objective of this study aimed to determine the effectiveness of a psycho-behavioral training model on the occurrence of health promotion and disease prevention behavior in middle school students. A pre test-post test control group design provided an understanding of the extent to which psychological characteristics can have an impact on 271 middle school students in increasing health promotion and disease prevention behavior after training. The major finding indicated that middle school students who received psycho-behavioral training gained greater psychological characteristics and health promotion and also showed greater disease prevention behavior than the control group after training. It can be concluded that psycho-behavioral training can promote health promotion and disease prevention behavior.

Keywords: health promotion and disease prevention behavior, psychological characteristics, middle school students

บทคัดย่อ

บทความนี้ได้นำเสนอวิธีการที่เหมาะสมในการเสริมสร้างพฤติกรรมการส่งเสริมสุขภาพและการป้องกันโรคโดยการฝึกอบรมทางจิต-พฤติกรรมศาสตร์บนพื้นฐานของหลักการที่ว่า จิตลักษณะเป็นสาเหตุของพฤติกรรม วัตถุประสงค์หลักของการวิจัย คือ เพื่อศึกษาประสิทธิผลของการฝึกอบรมทางจิต-พฤติกรรมศาสตร์ในการเสริมสร้างพฤติกรรมการส่งเสริมสุขภาพและการป้องกันโรคในกลุ่มนักเรียนระดับมัธยมศึกษาตอนต้น โดยใช้รูปแบบการวิจัยเชิงทดลองโดยใช้แบบแผนการทดลองแบบมีการทดสอบก่อน-หลังและมีการติดตามผลหลังการทดลองโดยมีกลุ่มควบคุมและกลุ่มทดลองในกลุ่มนักเรียนระดับมัธยมศึกษาตอนต้น จำนวน 271 คน ผลการวิจัยที่สำคัญพบว่าภายหลังการทดลอง กลุ่มทดลองมีจิตลักษณะและพฤติกรรมการส่งเสริมสุขภาพและการป้องกันโรคดีกว่ากลุ่มควบคุม จึงกล่าวได้ว่า การฝึกอบรมทางจิต-พฤติกรรมศาสตร์สามารถเสริมสร้างพฤติกรรมการส่งเสริมสุขภาพและการป้องกันโรคได้เป็นอย่างดี

คำสำคัญ: พฤติกรรมการส่งเสริมสุขภาพและการป้องกันโรค จิตลักษณะ นักเรียนระดับมัธยมศึกษาตอนต้น

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INTRODUCTION

Schools are institutions which play an important role in influencing the present and future health behavior and lifestyles of their students (World Health Organization [WHO], 1985; US Department of Health and Human Services, 2000). It has also been recognized that the formal activities of schools can significantly influence students' attitude and behavioral responses. The information received in the classroom can be completely undermined by what occurs outside the classroom (Bauman, Nutbeam, & Wise, 1993).

For many years, school-based health promotion programs have been implemented in the form of traditional health education through the school curriculum. Typically, teachers presented packages of information about health risk behavior in order to provide students with functional knowledge to influence their behavior. However, this approach is not based on any sound theoretical framework and produced little change in health behavior (Green & Levis, 1986).

This situation has forced academics in the area of health promotion to establish several models to promote student health in schools. The models have generally focused on health education, using "Social Learning Theory" (Bandura, 1977) and "Health Belief Model Theory" (Rosenstock, 1974) as the basis for developing health promotion programs. These models target the development of knowledge, attitude, and skills to help students develop healthy lifestyles (Bauman et al., 1993).

However, in reality, these programs have had little long term effect on the health behavior of school-aged children. Therefore, it is necessary to look beyond the existing models, and new approaches to promote school health need to be developed (Bauman et al., 1993). In addition, the Declaration of Alma Ata (WHO, 1978) and the Ottawa Charter (WHO, 1986) both recognize that education or training is just one strategy for improving children's health and they argue for more holistic health behavior. Consequently, a new approach to promote school health is needed.

In Thailand, based on the concept that psychological characteristics are causal factors of behavior, the "Moral Theory" (Punthumanawin, 1987) has been developed. This theory consists of eight psychological elements which are divided into two groups: characteristics related to a psychological basis, which consist of three elements —namely, intellectual ability, social experiences, and good mental health—and characteristics related to psycho-behavior, which consist of five psychological characteristics—namely, knowledge, attitude, future orientation, self control, and belief in the internal locus of control (Punthumanawin, 1994). For example, Ma-oon (2005) applied the theory in her study of the effectiveness of psycho-behavioral training on AIDS prevention behavior in male university students in Thailand. The results showed that the students who received training on the five psychological characteristics improved their AIDS prevention behavior significantly. In the same way, Pitakjareaun's study (Pitakjareaun, 2000) adopted the theory regarding the relationship between psychological characteristics and healthy behavior among adult people. Both studies show that the Moral Theory can be an appropriate approach in promoting good holistic health behavior in many groups of people.

Based on the Moral Theory mentioned above, training was conducted in five psychological characteristics—namely, knowledge about health promotion and disease prevention, attitudes toward health promotion and disease prevention, future orientation in health promotion and disease prevention, self-control in health promotion and disease prevention, and belief in the internal locus of control in health promotion and disease prevention. The findings shed light on how health promotion and disease prevention can be effective in a school setting.

RESEARCH FRAMEWORK

From the concept of the base theories of this study, the conceptual framework was synthesized as shown in Figure 1.

OBJECTIVES

The main objective of this study was to find the effectiveness of psycho-behavioral training on the occurrence of health promotion and disease prevention behavior in middle school students.

The specific objectives were:

1. To study the level of five psychological characteristics and health promotion and disease prevention behavior before training.
2. To study the correlation between psychological characteristics and health promotion and disease prevention behavior.
3. To develop the psycho-behavioral training model in health promotion and disease prevention for middle school students.
4. To examine the effectiveness of psycho-behavioral training on the occurrence of health promotion and disease prevention behavior in middle school students.

METHODS

This study was divided into three phases.

Phase 1: This phase aimed to study the level of students' psychological characteristics, health promotion, and disease prevention behavior before attending the training provided by identifying the psychological characteristics as causal factors of health promotion and disease prevention behavior. The samples, obtained randomly, consisted of 730 middle school students from three schools located in Bangkok. The questionnaire was divided into two parts: Part 1 was designed to study the bio-social background of the students and part 2 was designed to measure five psychological characteristics and five aspects of health promotion and disease prevention behavior. The data were analyzed using the percentage, mean, standard deviation and Pearson product moment correlation coefficient.

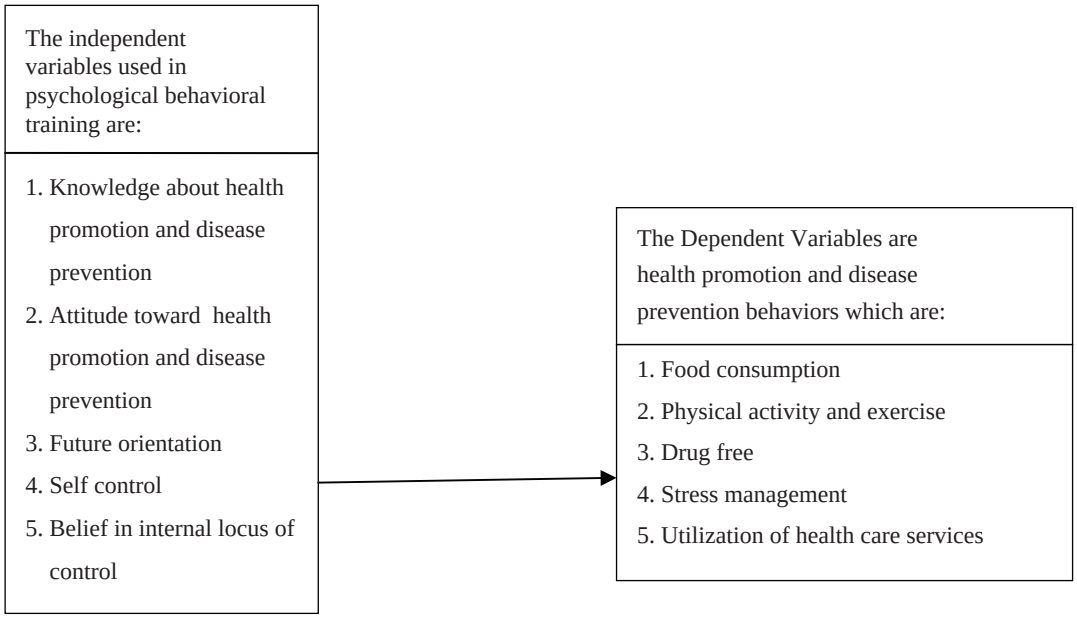

Figure 1 Conceptual framework showing the relationships of variables used in this research

Phase 2: The training model was developed, based on the results of the Phase 1 study, using the research procedure as follows:

1. Study of the principles, theories and related research on health promotion and disease prevention behavior in order to provide basic information and to utilize the searched information to develop the model and construct the activities (using learning theories and development theories in this research) as the base theories for the training model design.

2. Construction of the health promotion and disease prevention training model for middle school students according to the results of Phase 1 and also the information discovered mentioned in item 1 above. The training model consisted of six activities, with 18 hours to complete all six activities.

3. Investigation and determination of the quality of the health promotion and disease prevention training model for middle school students using the specific field experts who are health promotion and disease prevention experts to evaluate and verify the correctness and completion of the content including the consistency of the activities and students' development.

4. Investigation and determination of the training model using a pilot study utilizing the experts' opinion and full testing with 20 middle school students. The results should indicate which activities provide knowledge and which build attitude and can be adjusted to achieve clearer understanding and timing if necessary.

5. Improvements from the pilot study using the issues mentioned in item 4 including the addition of innovation and the reduction of the familiarized activity because the students are already familiar with each other.

6. Final checking and determining the correctness of the training model prior to implementation.

Phase 3: The effectiveness of the model was examined. The sample, obtained by purposive sampling, consisted of 271 middle school students from three schools located in Bangkok, who volunteered to participate in the study. A pre test-post test control group design was applied. The students were randomly assigned into experimental and control groups. The data were collected three times—before training, immediately after training, and 8 weeks after training. The data were analyzed by percentage, mean, standard deviation, t-test and analysis of variance. The procedures are shown in Figure 2.

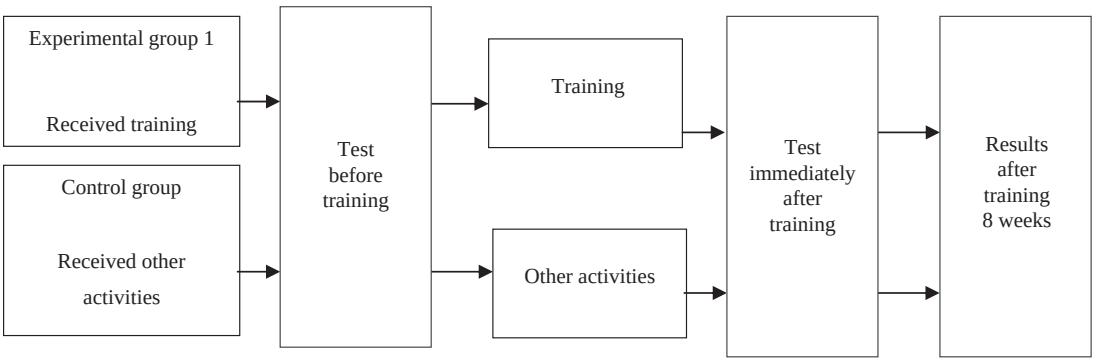

Figure 2 Steps of the experiment

Note: Other activities refers to the activities provided to the control group in testing throughout the research. However, these activities were not related to health promotion and disease prevention. These activities were speech training, invention of application using recycled material, Thai food cooking etc.

RESULTS

Phase 1: The level of the students' psychological characteristics and health promotion and disease prevention behavior were at the medium and low level and the five psychological characteristics were the causal factors of students' health promotion and disease prevention behavior (Table 1). In addition, the correlation values indicated that the psychological characteristics were the casual factors of health promotion and disease prevention behavior (Table 2).

Phase 2: The training model consisted of two major parts. Part 1 was the content of the model which focuses on the five psychological characteristics as the causal factors of students' health promotion and disease prevention behavior. Part 2 was the process of the training, with emphasis on being trainee-centered. The training model is shown in Figure 3.

Phase 3: Effectiveness of the model.

(1) After training, students had more of the five psychological characteristics than they had before training with the statistical significance at the level of .001 (Table 3).

The experimental group gained the five psychological characteristics at a higher level than the control group (Table 4).

Table 1 Percentage of students showing the level of psychological characteristics and health promotion and disease prevention behavior

(n= 730)

Level	Knowledge	Attitude	Future orientation	Self control	Belief in internal locus of control	Health promotion and disease prevention behavior
High	34.15	30.28	28.05	29.60	25.35	27.23
Medium	40.02	37.44	42.02	39.50	45.89	47.07
Low	25.83	32.28	29.93	30.80	28.76	25.70

Table 2 Correlation values showing the psychological characteristics as the casual factors of health promotion and disease prevention behavior

(n= 852)

Variable	Health promotion and disease prevention behavior (r)
Knowledge	.32***
Attitude	.40***
Future orientation	.33***
Self control	.31***
Belief in internal locus of control	.47***

*** $p < .001$

Eight weeks after training, the students who had undergone training had acquired more health promotion and disease prevention behavior than the control group (Table 5).

(2) The correlation value between the five psychological characteristics and health promotion and disease prevention behavior of the experimental group was higher than for the control group. The relationships between the psychological characteristics measured immediately after training and those measured eight weeks after training, of the experimental group were higher than the control group (Table 6 and Table 7).

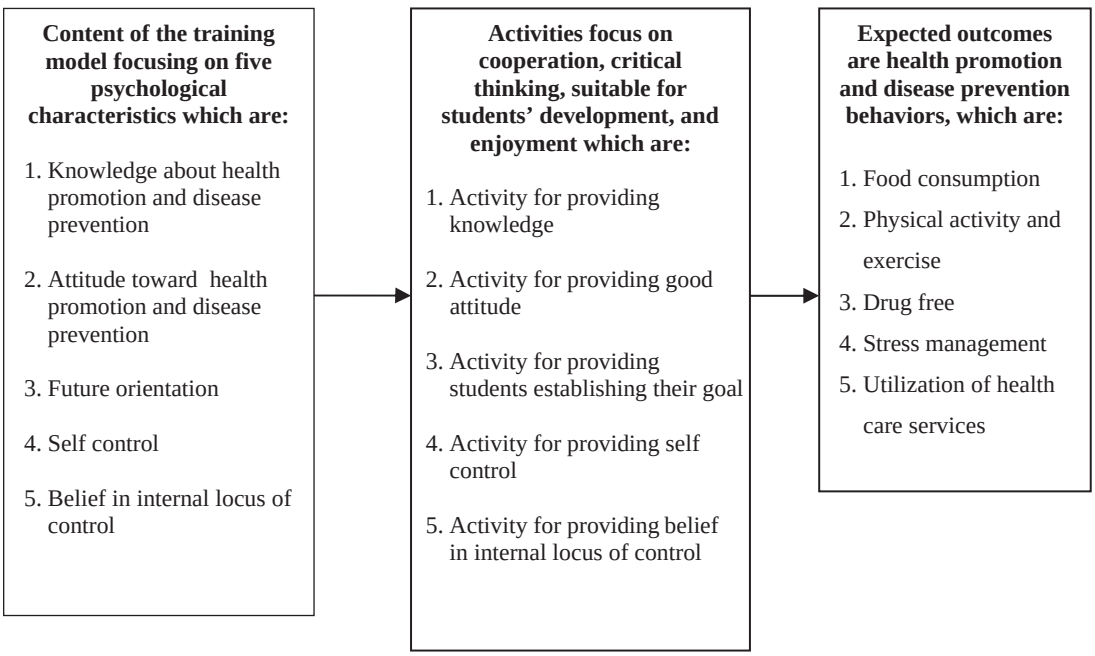

Figure 3 Training model used in the study

Table 3 Comparison of mean scores of five psychological characteristics in the experimental group before and after training

Variable	Before training (n = 133)		After training (n = 133)		*t*-test value
	$\bar{X}$	SD	$\bar{X}$	SD	
Knowledge	25.62	4.11	31.30	4.49	12.32***
Attitude	69.02	9.63	72.06	7.93	2.23**
Future orientation	59.04	5.79	62.70	7.19	4.30***
Self control	92.52	12.45	102.34	11.35	7.09***
Belief in internal of control	54.24	5.72	57.56	6.96	4.31***

**$p < .01$ ***$p < .001$

Table 4 Comparison of mean scores between experimental and control groups of five psychological characteristics measured after training

Variable	Experimental group (n = 133)		Control group (n = 138)		*t*-test value
	$\bar{X}$	SD	$\bar{X}$	SD	
Knowledge	28.60	50.96	25.92	4.76	2.48*
Attitude	75.78	7.61	68.81	6.87	2.57*
Future orientation	59.45	4.92	54.75	4.36	2.08*
Self control	54.98	5.55	52.02	5.94	2.35*
Belief in internal of control	96.60	12.31	92.25	8.66	2.28*

* $p < .05$

Table 5 Comparison of mean scores between experimental and control groups of health promotion and disease prevention behavior measured after training for 8 weeks

Variable	Experimental group (n = 133)		Control group (n = 138)		*t*-test value
	$\bar{X}$	SD	$\bar{X}$	SD	
Health promotion and disease prevention behavior	99.57	9.53	87.51	9.91	10.21***

*** $p < .001$

Table 6 Comparison of correlation value on five psychological characteristics and health promotion and disease prevention behavior of the experimental group and control group after training

Psychological characteristic	Correlation value (r) Health promotion and disease prevention behavior	
	Experimental group (n= 133)	Control group (n= 138)
Knowledge	.32***	.12
Attitude	.39***	.20*
Future orientation	.24***	.21*
Self control	.20***	.14
Belief in internal locus of control	.41***	.18

* $p < .05$, *** $p < .001$

Table 7 Shows the comparison of correlation value between five psychological characteristics and health promotion and disease prevention behavior of the experimental group and control group measured 8 weeks after training

Psychological characteristic	Correlation value (r) Health promotion and disease prevention behavior	
	Experimental group (n= 133)	Control group (n= 138)
Knowledge	.40***	.10
Attitude	.39***	.18*
Future orientation	.23***	.19*
Self control	.33***	.14
Belief in internal locus of control	.46***	.12

* $p < .05$, *** $p < .001$

DISCUSSION

The research results indicated that the five psychological characteristics were the casual factors of students' health promotion and disease prevention behavior. The students' health promotion and disease prevention behavior and the five psychological characteristics were at a low level because they were not trained in psychological characteristics, so when they were trained, both psychological characteristics and health promotion and disease prevention behavior increased to a high level. This indicates that the Moral Theory can be applied to develop good and intelligent people to act in a way that benefits themselves and society.

When the training of psychological characteristics is applied as the casual factor of health promotion and disease prevention behavior, it is essential to provide the students with a multi-activity package based on their developmental stages. The training has to be student-centered because it helps students learn with their peers, and the package must employ critical thinking which helps lead them to be good and intelligent people. (Wongpiromsarn,1994)

The results also showed that the training model was effective for developing health promotion and disease prevention behavior, so this confirms that the Moral Theory (where the psychological characteristics are the casual factors of behavior and where an appropriate method is adopted) leads to more desirable behavior of the students. Furthermore, the results indicated that training associated with knowledge and attitude is insufficient to develop good behavior. However, this result disagreed with Wiboonsawad's study (Wiboonsawad,1992), which found that knowledge is not needed because students can get functional knowledge from regular classroom activities. In the current study, it was found that the student knowledge before the training was low, so it was necessary for the knowledge to be instilled in the students. Thus, before training, the knowledge level and extent should first be examined to see whether additional training is needed or not. Furthermore, this research found that after training, the retention of training was still at a high level, perhaps because the psychological characteristics are natural characteristics, and therefore, whenever they are stimulated by appropriate methods, the psychological characteristics are easily developed.

CONCLUSION

Middle school students who received training in five psychological characteristics—

namely, 1) knowledge about health promotion and disease prevention; 2) attitude towards health promotion and disease prevention; 3) future orientation; 4) self control; and 5) belief in internal locus of control—gained both psychological characteristics and health promotion and disease prevention behavior when compared with students who had received no training. To be more specific, the relationships between psychological characteristics and health promotion and disease prevention behavior were higher in the group that received training than in the control group. Consequently, in order to develop a pattern of psychological characteristics associated with training in developing health promotion and disease prevention behavior, all five psychological characteristics must be taken into account. The research conclusion can be seen in Figure 4.

RECOMMENDED RESEARCH IMPLICATIONS

The development of psycho-behavior in middle school students must be performed conscientiously and continuously under the management of institutions. In developing human resources at the middle school level, adopting the psycho-behavioral training of five psychological characteristics as mentioned above in order to develop good health behavior in students can be

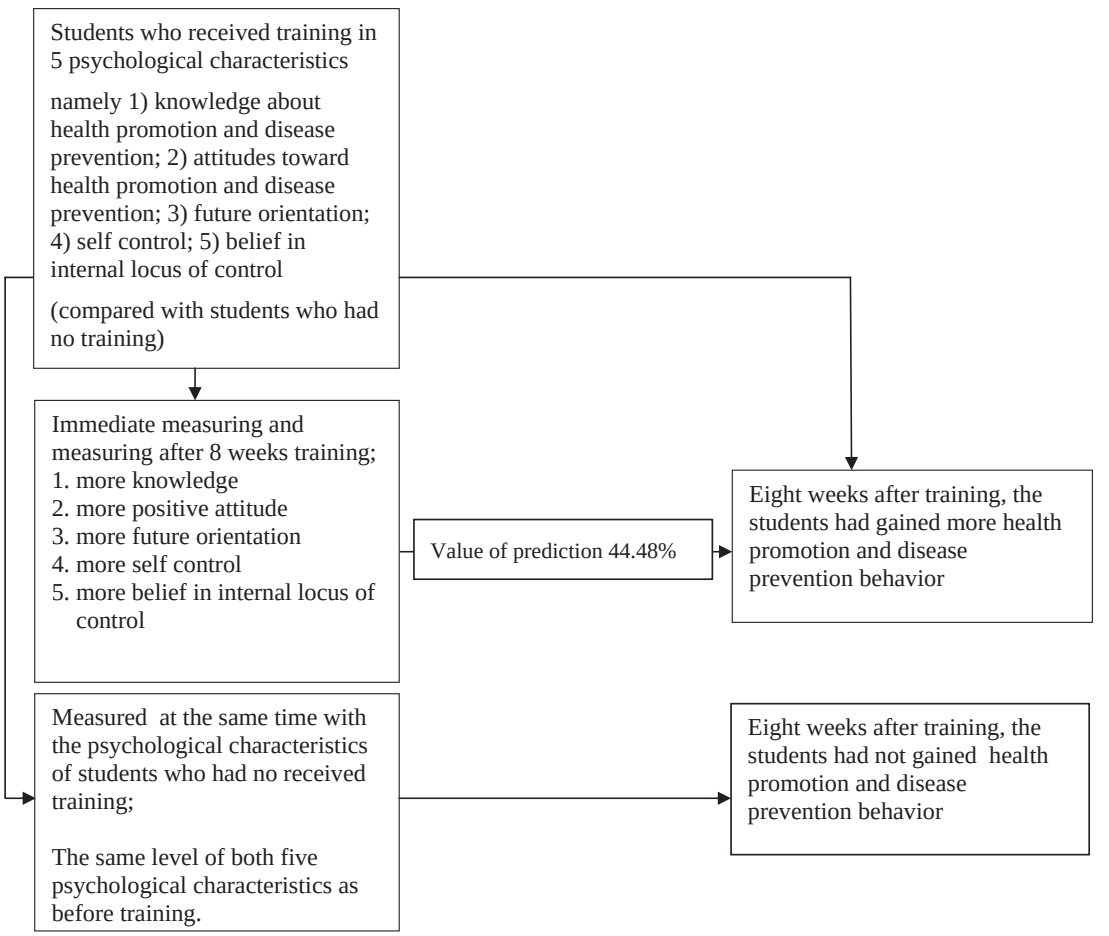

Figure 4 Research results conclusion

included in the government policy because of its tested effectiveness. In addition, by adopting the model, middle schools can establish patterns of developing students using psycho-behavior, thereby stimulating both better behavior and developing intelligence.

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