



Determining the need for classroom teachers' skills in using cognitive awareness strategies

Sevgi Ozden Karakurt^{a1}, Erciyes University, Graduate Schools of Educational Sciences, Curriculum and Instruction Ministry of National Education, Türkiye sevgi431@gmail.com

Semra Demir Basaran^b, Erciyes University, Faculty of education at Erciyes University, Türkiye sdemir@erciyes.edu.tr

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Abstract

This study, stems from the need to explore teachers' requirements for about integrating cognitive awareness strategies into competencies. The research adopts a mixed-methods approach, employing three data collection tools. Qualitative nature tools are a structured observation form and a semi-structured interview form. The qualitative data obtained were analyzed using descriptive analysis techniques. Quantitative data were collected by administering the Educational Metacognitive Regulation Inventor were analyzed using descriptive statistical techniques in the SPSS software. Findings revealed that classroom teachers rarely utilized cognitive awareness strategies in their teaching environments and had limited knowledge about cognitive awareness strategies and were unaware of their importance in instructional settings. The findings of this study highlight the need for classroom teachers to use cognitive awareness strategies. They are expected to serve as a guide for designing professional development activities.

Keywords: cognitive awareness strategies; classroom teachers; professional development

* ADDRESS FOR CORRESPONDENCE: Sevgi Ozden Karakurt, Erciyes University, Graduate Schools of Educational Sciences, Curriculum and Instruction Ministry of National Education, Türkiye sevgi431@gmail.com

1. INTRODUCTION

Cognitive awareness is a mechanism that enables individuals to monitor, evaluate and regulate their own knowledge, thinking processes, cognitive and emotional states (Gavelek & Raphael, 1985; Hacker, 1998). This mechanism starts with the individual being aware of what he/she knows and what he/she needs to know; it continues with planning what to do and how to do it, evaluating, correcting and retrying the plan. The cognitive awareness process enables the development of high-level thinking skills such as problem solving, analysing, planning, critical thinking and making judgements. These skills, which are explained under the umbrella of "cognitive awareness skills", are also accepted as the basic skill areas required by the new world order, such as analysing and applying information, which is increasing day by day and whose reliability is doubtful, to different situations.

For skill development, teaching environments containing effective and rich learning experiences are needed (Ashman & Conway, 1993). It is the responsibility of teachers to establish the interaction between the environment and the individual and to ensure the continuity of this interaction. At this point, teachers who aim to develop cognitive awareness skills are obliged to organise all components of the learning process accordingly. In the literature, there are various approaches explaining how teachers can organise a teaching process that will develop cognitive awareness (Brezin, 1980; cited in. Solley & Payne, 1992; Costa & Lowery, 1989; Oxford, 1990; Paris & Winograd, 1990). Among these, the 12-step strategy proposed by Costa (1984) has been found to be used effectively in teacher and adult education. This approach, which consists of planning, generating questions, conscious choice, different evaluation, providing confidence, prohibiting the word "can't", saying it in different ways, reflecting students' ideas back, defining students' behaviours, clarifying students' definitions, role playing and imitation, journaling and modelling, is based on the principle of gaining cognitive awareness skills through activities. Costa (1984) points to a learning process in which teachers and students can learn better with mutual effort, have the opportunity to improve by evaluating themselves, and have mutual control with the cognitive awareness strategies offered to teachers. The teaching activity carried out with these strategies includes the structuring of academic content, activities and experiences, mutual information exchange and co-operation, controlled use of the cognitive awareness skills gained by the student and transferring these skills to other areas. The affective dimension of the approach includes the sense of ownership of the student's actions, goals and results in the classroom; maturation and dedication.

The benefit of designing instruction with the 12-step strategy, which stands out in the literature due to its effectiveness in teaching cognitive awareness, brings teachers' competences on this issue to the agenda. In recent years, teaching contents targeting the teaching of cognitive awareness are frequently encountered both in teacher training programmes and in-service activities. However, it has been determined that cognitive awareness-oriented researches in Turkey are generally planned for students, while there are fewer studies on teacher development. On the other hand, it is known that the Ministry of National Education organises professional development activities related to the teaching of cognitive awareness within the scope of teacher training and development. However, since these activities are theoretical and at the level of knowledge, they are insufficient in developing instructional skills. The current situation suggests that teachers need effective professional training to improve their ability to use cognitive awareness strategies. Determining this need has a critical value in terms of its contribution to raising individuals who consciously manage their own learning processes. From this point of view, teachers' needs for teaching cognitive awareness constitute the starting point of this study.

The aim of the research is to determine the needs of classroom teachers for their ability to use cognitive awareness strategies. The sub-problems of the research determined in line with this purpose are as follows:

1. What are the skills of classroom teachers in using cognitive awareness strategies?
2. What are classroom teachers' views on their ability to use cognitive awareness strategies?

3. What are the average scores of classroom teachers obtained from the Metacognitive Regulation Inventory in terms of various variables (gender, professional experience, education level, class size)?

The fact that primary school years are a critical period in terms of the development of attitudes and behaviours towards learning makes this study, which aims to increase the development of classroom teachers' equipment on this subject, valuable.

2. METHODS AND MATERIALS

2.1. Research Design

In this study, a mixed research model, which is a combination of quantitative and qualitative research methods, was used. As a practical synthesis of qualitative and quantitative research, the mixed research model provides informative, comprehensive, balanced and useful research results (Johnson, Onwuegbuzie & Turner, 2007). In the study, which was organised in a nested mixed research design, quantitative data were used to support qualitative data.

2.2. Study group

Within the scope of the research; semi-structured interviews were conducted with 12 classroom teachers selected by purposive sampling method among classroom teachers in a city located in the inner region of Turkey, and 4 classroom teachers were observed in the classroom. In addition to these, the quantitative data of the study were collected from 300 classroom teachers reached by random sampling method.

2.3. Data collection tools

Three types of data collection tools, quantitative and qualitative, were used in the study. These are; (1) structured observation form, (2) semi-structured interview form and (3) Metacognitive Regulation Inventory in Education.

2.3.1. Structured observation

Based on the fact that the use of cognitive awareness strategies is an implicit skill as opposed to a specific domain skill, it was decided that it was necessary to observe teachers in the classroom environment. The development of the observation form was based on the 12-step strategy suggested by Costa (1984) for teachers. The draft form, which was initially composed of 36 items, was reduced to 31 items after expert opinions and pilot observation, and the form was finalised.

2.3.2. Semi-structured interview

In the study, semi-structured interview technique was used to obtain in-depth information about classroom teachers' awareness of cognitive awareness strategies, their needs and suggestions through pre-prepared questions. In the creation of the interview form prepared by the researcher; various approaches in the literature, the items in the observation form and the metacognitive regulation inventory were determinative. The draft form, which was submitted to expert opinion, was finalised after the pilot interview.

2.3.3. Metacognitive regulation inventory in education

The quantitative data of the study were collected with the "Metacognitive Regulation Inventory in Education" (Güzel & Başokcu, 2023), which measures the extent to which teachers regulate both their own and their students' knowledge. The first form of the scale, which consists of two forms, is the "teacher-self" form that reveals whether the teacher organises his/her own knowledge with a cognitive awareness; the second form is the "teacher-classroom" form that measures the regulation of students' cognition. It was determined that both forms measured the latent construct that they aimed to measure as highly reliable and valid (Güzel & Başokçu, 2023).

2.4. Data collection process

2.4.1. Collection of data obtained by observation

The teachers to take part in the observation process were selected from among the teachers in the school where the first researcher was working by applying the convenience sampling method in terms of suitability for

the least intervention in the natural process. During the pilot observation before the observation, it was noticed that the observed teacher was not comfortable and did not exhibit natural behaviours. For this reason, it was decided that another practitioner other than the researcher would carry out the observation process. After the evaluations made, it was deemed appropriate for two school counsellors working at the school where the observation would take place to be involved in the research process as observers. This decision was made based on the fact that school counsellors would exhibit natural behaviours in this situation, which teachers and students frequently encounter, since they observe student behaviours by entering the classrooms in certain periods. With this decision, the school counsellors who were included in the research process were informed by the researcher about the subject of the research and the purpose of the observation, using the observation form effectively, taking observation notes, making unbiased observations, and creating a comfortable and suitable environment. In order to ensure observer consistency, two observers were allowed to observe 4 lessons together before starting the observations and Kopen Kappa analysis of the results obtained by the observers from the same observation was performed. The value obtained (0,86) showed that the observers were compatible with each other.

The practitioners who carried out the observation, in the role of "observer without participant", observed 4 classroom teachers over a period of 8 weeks. The practitioners added the notes they took during the observation to the observation form. Accordingly, the observation process was carried out with the note-taking technique, which is frequently preferred in observation-based research (Karasar, 2007; Yıldırım & Şimşek, 2008). The demographic information of the observed teachers is given below.

Table 1

Demographic information of the observed teachers

Teacher	Gender	Seniority	Class size	Education level
G1	Male	6	24	Postgraduate Edu.
G2	Woman	17	30	Faculty of Edu.
G3	Male	32	38	Institute of Edu.
G4	Woman	20	18	Out of field/Formation

2.4.2. Collection of data obtained by interview

In the selection of the teachers to be interviewed, maximum diversity sampling, one of the purposeful sampling methods, was used. The aim of this method is to reflect the diversity of individuals to the maximum degree, to try to find out whether there are any common or shared facts among the diverse situations and to reveal different dimensions of the problem according to this diversity (Yıldırım & Şimşek, 2000). In the study, 12 classroom teachers working in four different primary schools were interviewed. The characteristics of the participants listed as gender, professional seniority, class size and education level are shown in the table below.

Table 2.

Demographic information of the interviewed teachers

Teacher	Gender	Seniority	Class size	Education level
T1	Male	8	23	Faculty of Edu.
T2	Woman	17	30	Faculty of Edu.
T3	Male	28	38	Institute of Edu.
T4	Woman	22	27	Out of field/Formation
T5	Male	33	29	Institute of Edu.
T6	Woman	26	35	Postgraduate Edu.
T7	Male	11	18	Faculty of Edu.
T8	Woman	15	22	Postgraduate Edu.
T9	Male	31	24	Institute of Education
T10	Woman	29	31	Out of field/Formation
T11	Woman	14	42	
T12	Woman	25	20	

2.4.3. Collection of data obtained with metacognitive regulation inventory in education

Metacognitive Regulation Inventory in Education was applied to 300 classroom teachers reached by random sampling method.

2.5. Analysing the data

2.5.1. Analysis of the data obtained by observation

The structured observation form developed during the research process consists of 12 dimensions and behaviours that are indicators of these dimensions, taking into account Costa's (1984) cognitive awareness strategies. The data collected with the observation form were analysed with descriptive analysis technique.

2.5.2. Analysis of the data obtained through interviews

The interviews with the classroom teachers were transferred to the interview do cluster form and the wrong or missing parts were checked. An "Interview Coding Key" with answer options for each question item was prepared. In order to ensure the internal validity and reliability of the research, member checking method was used. Member checking, which is carried out by the people who conducted the research and provided the data, is the process of giving the written version of the interview to the interviewer and checking that the recording is correct (Punch, 2005). In addition, the interview coding keys and interview do sets were read separately by the researcher and another expert, and arrangements were made on the issues of "consensus" and "disagreement". For the reliability calculation of the research, the reliability of the research was calculated as 96% by using the reliability formula suggested by Miles and Huberman (1994). The data were analysed by descriptive analysis method under the categories and codes determined within the framework of the interview questions.

2.5.3. Analysis of the data obtained with the metacognitive regulation inventory in education

In order to support the qualitative data in the research process, the quantitative data collected with the metacognitive regulation inventory in education were analysed in SPSS software. The findings were presented with frequency, arithmetic mean and standard deviation values.

3. Findings

3.1. Findings related to observations

The findings of the observation data are presented under the categories determined based on the dimensions in the structured observation form. Accordingly, when the observation findings related to the "Planning" dimension were analysed, the most frequently observed features were that the teacher gave information about the outcomes (24). In the observations related to the "Question Formation" dimension, it was observed that teachers directed students to form questions at the end of the lesson (7). The number of teachers who asked students to form questions about the content of the lesson (2) and encouraged them to ask questions during the learning activity (4) were fewer than the number of teachers who did not ask questions. In the observation findings related to the dimension of "making conscious choices", it was frequently observed that teachers wanted students to reveal the reasons for the choices they made during the learning activity (25) and gave feedback without prejudice (28). The characteristics of the dimension of "evaluation with more than one criterion" and the frequency of observations were as follows: asking students to indicate the things they liked during the learning activity (6) and asking them to indicate the situations they disliked/difficulties (4). The most frequently observed feature in the dimension of "providing trust" was that teachers directed students to give feedback to their friends

(18). In the dimension of "prohibiting the word 'can't'", the most frequently observed characteristics were that the teacher did not approve words such as "can't" in the classroom (22), gave hints for solving problems (27) and emphasised that every problem has a solution (29). The most frequently observed feature in the dimension of "reflecting students' ideas" was that the teacher directed the students to compare their own ideas with the ideas of their friends (14). Encouraging students to express their ideas about the learning activity (6) was observed less frequently. In the dimension of "defining student behaviours", the characteristic of specifying the behaviours to be exhibited (28) was frequently observed. In the dimension of "explaining student terminology", teachers were observed in terms of asking for clarification of unclear expressions (30) and supporting students in explaining these expressions (21). In the dimension of "role-playing", the most frequently observed characteristic was that the teacher created activities that would enable empathy (12). The other feature in this dimension is that the teacher prepares the learning environment for the drama method (8).

3.2. Findings related to interviews

The findings of the interview data were presented under the categories determined for descriptive analysis. Accordingly, in the category named with *the concept of cognitive awareness*, the definitions of the concept and the related skills were collected. I3, one of the teachers, said *"I don't know exactly what this concept means, but I thought of it as applications for developing intelligence"*. Another teacher, G7, explained his opinion as *"being aware of what the purpose of doing things related to the lesson is, being interested..."*. The second category, which was determined as the *effects of teacher attitude*, consists of the opinions revealing the positive and negative dimensions of this effect. In his opinion on this subject, I11 emphasised the positive attitudes of teachers by saying *"If a teacher is compassionate and loves children while doing his/her job, you know that there is success in that class"*. I8, on the other hand, mentioned negative teacher attitudes by saying *"being indifferent to students, doing injustice disrupts discipline in the classroom, for example..."*. In the category of *cognitive awareness strategies*, it was determined that teachers mostly expressed their opinions on problem solving and making conscious choices. among them, I5 stated that *"in my opinion, problem solving is the last level for a student, who does this, does everything."* In the category of *in-service training needs*, there are opinions and suggestions of teachers regarding professional development activities. Referring to the quality of the learning environment, I4 said, *"I am more motivated to distance education because it is comfortable and does not disrupt the flow of life."* Regarding the quality of the lecturer, I12 stated that *"when there are lecturers who read their lectures from the screen, effective things should not be expected"*. Regarding the content of the instruction, G2's statement *"I think that it would be both beneficial for us and economical for the state to spend time to learn not known but unknown information or information that I will use in the lesson."* emphasised that the trainings aiming at professional development should be need-oriented.

3.3. Findings related to metacognitive regulation inventory

3.3.1. Findings related to metacognitive regulation inventory of classroom teachers according to gender variable

Table 3 shows the mean scores and standard deviation values of the metacognitive regulation inventory according to the gender of the classroom teachers.

Table 3.

Classroom teachers' values obtained from metacognitive regulation inventory according to gender variable

Form	Group	N	$\bar{X}$	Ss
Organising own cognition	Woman	156	47,02	4,98
	Male	144	46,82	5,18
Organising students' cognition	Woman	156	57,80	6,39
	Male	144	57,24	7,07

The mean scores of classroom teachers' ability to regulate their own cognitions and students' cognitions were analysed in terms of gender variable. When the findings in Table 3 are analysed; the mean scores of female

teachers' metacognitive regulation towards themselves ($\bar{X}=47,02$) are higher than male teachers ($\bar{X}=46,82$). In addition, it is seen that the mean scores of both groups for metacognitive regulation towards students are close to each other.

3.3.2. Classroom teachers' findings related to metacognitive regulation inventory according to professional seniority variable

Table 4 shows the mean scores and standard deviation values of the metacognitive regulation inventory according to the seniority of the classroom teachers.

Table 4.

The values obtained from the metacognitive regulation inventory according to the professional seniority variable of classroom teachers

Form	Group	N	$\bar{X}$	Ss
Organising own cognition	1-10 years	66	43,97	5,76
	11-20	71	47,24	4,00
	years	87	49,77	5,29
	21-30	75	47,00	5,04
	years			
	31 years +			
Organising students' cognition	1-10 years	66	51,47	8,04
	11-20	71	58,17	5,55
	years	87	62,15	6,79
	21-30	75	57,27	6,69
	years			
	31 years +			

When the findings in Table 4 were analysed, it was found that the group with the lowest metacognitive self-regulation score was classroom teachers with 1-10 years of seniority ($\bar{X}=43,97$). The highest score for this dimension belongs to teachers with 21-30 years of seniority ($\bar{X}=49,77$). Similarly, the highest score in the dimension of organising students' cognition belongs to teachers with a seniority between 21-30 years ($\bar{X}=62,15$). In the findings where the scores of both dimensions were similar, it was determined that the scores of the classroom teachers who were new to the profession and who had seniority between 21 and 30 years were low in organising students' cognition.

3.3.3. Findings related to metacognitive regulation inventory according to the education level of classroom teachers

Table 5 shows the mean scores and standard deviation values of the metacognitive regulation inventory according to the education levels of the classroom teachers.

Table 5.

The values obtained from the metacognitive regulation inventory according to the education level variable of classroom teachers

Form	Group	N	$\bar{X}$	Ss
Organising own cognition	Institute of Edu.	85	42,87	6,51
	Faculty of Edu.	114	55,02	4,44
	Postgraduate Edu.	38	60,85	3,52
	Out of field/Formation	62	41,80	2,63
Organising students' cognition	Institute of Edu.	85	46,63	4,98
	Faculty of Edu.	114	58,51	8,45
	Postgraduate Edu.	38	62,40	3,29
	Out of field/Formation	62	42,15	6,00

When Table 5 is analysed, it is seen that the group with the highest score in regulating their own cognition consists of teachers who have received or are receiving postgraduate education ($\bar{X}=60,85$). Similarly, teachers in this group also came to the forefront in regulating their students' cognition ($\bar{X}=62,40$). In the findings of both dimensions, the lowest score belongs to the teachers who graduated from institute of education ($\bar{X}=42,87$; $\bar{X}=46,63$).

3.3.4. Classroom teachers' findings on metacognitive regulation inventory according to class size variable

Table 6.

The values obtained from the metacognitive regulation inventory according to the variable of class size taught by classroom teachers

Form	Group	N	$\bar{X}$	Ss
Organising own cognition	18-24 learners.	79	51,50	6,69
	25-31 learners.	81	49,41	7,60
	32-38 lecturer.	87	45,85	5,91
	+ 39- lecturer.	53	40,64	5,08
Organising students' cognition	18-24 learners.	79	54,22	4,98
	25-31 learners.	81	52,76	5,71
	32-38 lecturer.	87	48,79	3,84
	39- + learnr	53	40,27	4,99

The findings revealed that the metacognitive regulation scores of classroom teachers working in crowded classrooms were low in terms of both dimensions. In Table 6, it is seen that the highest score in the dimension of regulating both their own cognition and their students' cognition belongs to the classroom teachers with 18-24 students ($\bar{X}=107,86$).

4. Discussion and Conclusion

In the research findings, it was determined that the observed teachers did not use most of the cognitive awareness strategies in the teaching environment. Similar studies in the literature coincide with this result (Goos, Galbriath, & Renshaw, 2000; Yimer & Ellerton, 2006). When the frequency of observation of these strategies during learning activities was analysed, it was found that "keeping a diary" strategy was the least observed dimension. This result is the same with the result of a similar study conducted by Kazu and Yıldırım (2013).

Teachers' opinions showed that they did not have enough knowledge about cognitive awareness strategies and they did not know why they should use these strategies in the teaching environment. In the findings obtained with the Metacognitive Regulation Inventory, it was determined that the cognitive regulation scores of teachers with large class size, associate degree education level and professional seniority of more than 10 years were low. This coincides with the results of many studies on teachers' cognitive awareness skills (Akyüz, 2006; Akyol & Garrison, 2011; Doğan, 1999; Lainer, 1996; Pinnegar, 1993; Rice, 2003). Teachers reported that professional development activities should be organised through distance education and should be based on active participation (Fahad, 2009; Gültekin, 2006; Shaqour, 2005; Yaman, 2009).

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