

## THE MULTIDIMENSIONAL APPROACH OF LEARNING TO LEARN COMPETENCY

**Lorena PECULEA Assistant, PhD,  
Technical University of Cluj-Napoca  
[lorena.peculea@dppd.utcluj.ro](mailto:lorena.peculea@dppd.utcluj.ro)**

**Abstract:** *The starting point for an attempt to define, in the personal approach, the learning to learn competency is the context of theoretical and conceptual framework of defining the competency as a holistic concept. The variety of theoretical contributions within the scientific literature has led us to try to structure a development model of learning to learn competency in an integrative and original manner. It articulates systemically the combination of knowledge, skills and attitudes necessary for the development of this competency according to the levels of learning taxonomy; it values entirely the processes of critical reflection, of metacognitive reflection and strategic decision making within a socio-constructivist context. We bring some arguments underlying the construction of the theoretical model and on which we based the future application of our educational intervention program.*

**Key words:** *competency, learning to learn, integrative model*

### 1. Introduction

Desired transformations in society require increasing student performance, which will generate the competencies necessary for professional and social future success of students nowadays. In this context, learning to learn is an essential tool for lifelong learning. Thus, education and training have to secure the learning environment in order for this competency to be developed for every citizen, including individuals that are part of a disadvantaged group (those with special needs, dropping out of school etc.) as well as through different learning contexts (formal, non-formal and informal). Learning to learn increases student's responsibility in his role as leader of his own learning. Organizing a supportive educational environment that will enable students to learn from mistakes, to develop gradually self-directed capabilities, learning management, reflection on their own learning, is an essential condition of instruction.

The educational systems must ensure the competencies development for all members of society, not being concerned just with educating young people. Education for competencies is a challenge for all segments of the education system. One thing is clear, namely, that the current educational systems consider the essential role of competencies in their role as organizers of knowledge.

## **2. Challenges of the concept of competency in postmodern pedagogy**

The competency, as an intensely theorized conceptual unit, became the core of debate and research in various fields, including the field of education sciences. By analysing unilaterally its semantic dimensions, it has often created confusions and overlaps of meaning and significance regarding the definition of competency.

Many recent approaches in defining the concept of competency reveal not so much the competent product represented by performance, but rather explore and emphasize its formation process. The definitions of many authors, both foreign and Romanian, (Parry, S.B., 1996; Mirabile, R.J., 1997; Delory, C., 2002; Jeris, L., Johnson, L., 2004; Dooley, K.E. et al. 2004; Bocoş, M., 2008; Potolea, D., Toma, S., 2010; Voiculescu, F., 2011; Mândruţ, O., Catană, L., Mândruţ, M., 2012 etc.) converge to consider competency as *a set of knowledge, skills and attitudes that selected, interacted and used properly, allow the successful implementation of tasks to professional or social contexts.*

The term "competency" denotes "a complex system of actions that includes cognitive skills, attitudes and other non-cognitive components" (Rychen, D.S., Tiana, A., 2004). Proposing a functional approach of competency, the authors consider this conceptualization as being a holistic one in the sense that external requirements, individual attributes and context are integrated as essential elements of competent performance. Therefore, each competency defined in this perspective corresponds to "interdependent combination of cognitive and practical skills, knowledge, motivations, values, attitudes, emotions and other social and behavioral components that together can be mobilized for effective measures in a particular context" (Rychen, D.S., Tiana, A., 2004).

A solid exploration of the concept was realized by OCDE within the program DeSeCo. Relying on this, the term competency was defined by Rychen and Salganik (2003) as being: "the ability to successfully satisfy complex requirements in a particular context, through the engagement of psychosocial prerequisites including cognitive and non-cognitive aspects" and as "internal mental structures, namely abilities, dispositions or resources

incorporated in the individual when interacting with an assignment or a real life specific requirement” (Hoskins, B., Deakin Crick, R., 2010). A competency, as a holistic notion, could not be reduced to its cognitive dimension (Rychen and Salganik, 2003) as often happens when assessing skills in school tests and large-scale assessments, where it is traditionally limited to cognitive components.

Constructivist approaches and interpretations (Eraut, 1995; Dall'Alba and Sandberg, 1996; Stoof et al., 2002; Sandberg and Pinnington, 2009 apud Ripamonti, S., Scaratti, G., 2011) believe that qualitative manifestation of competency is directly influenced and dependent on contextualized experiences that individuals are living. It is not only the context can influence the quality of the competency manifestation, but also subjective experiences of individuals, determined by context. Therefore, the definition of competency should be guided by context, by area in which it manifests itself. Each author has a personal vision about competency, but they all agree with the fact that the term “competency” is polysemantic. Therefore, the optimal approach to defining the concept of competency is the constructivist perspective, an approach for which not the definition itself is important, but whether the definition was proved to be reliable and adequate within the context in which it was used.

Pedagogy of competencies fits perfectly with a constructivist view of learning in which students approach the knowledge as competencies in order to solve problems. But this practice should not make us forget that learning also requires the automation and structuring phases, which reminds us exactly the twice aspect of competency: the repertoire of standard actions and the adapting to new. Pedagogy, therefore, that aims to develop the competencies, increases also student's efforts for meaningful experiences by focussing on purpose, active, authentic and collaborative tasks (Jonassen et al., 2008).

The frequent mention of the "competency" concept is proof of its relevance with implications not only on teaching, learning and assessment, but also on formal education, teacher training, socio-professional training etc. At the same time, taking the concept and its application to saturation in political speeches and in other fields or the improper use may have a negative effect (Niculescu, R., 2010).

Understanding the conceptual point of view of "competency" and of "competency-based education" differs significantly among stakeholders and involved parts - researchers, policy makers in education, teachers in the field etc. Competency-based education is a learning process centered on the ability and the responsibility of each student and the development of autonomy and self-confidence. It follows essentially three main objectives (Roegiers 2004 apud Manolescu, M., 2010):

1. To emphasize the competencies that the student have to master at the end of each school year and at the end of compulsory education;

2. To make sense of learning, to show student how he/she can use what he learns in school.

3. To certify the student acquisitions in terms of solving the specific situations and not in terms of a sum of knowledge and skills that the student will forget and doesn't know how to use them in working life.

Competency-based learning is built on a teaching and learning system that constantly develops students' autonomy and learning to learn ability. Thus, students are real organizers of their own learning and therefore need motivation and supervision, as well as the development of cognitive strategies and goals that will help them to learn and reflect on their learning.

The advantages of competency-based learning within the school are summarized by B. Rey et al. (2012) as follows:

- Avoids fragmentation of tasks and loss of meaning for students.
- Incites the learning in an active state.
- Gives purpose and meaning to school knowledge.
- Helps learning to operate a deep transformation within the learners.
- Can contribute to reducing the selectivity and the "failure culture".

### **3. The multidimensional nature of learning to learn competency**

"Learning to learn" is one of the desirable competencies proposed by EU for its citizens. How do we teach others to learn? All educators are looking for the answer to this question in order that their students achieve the best results. Unfortunately, the students memorize more than learn, but they are convinced that they have learnt. Therefore, the Romanian school must become the school of innovative learning and in depth learning (Chiş, V., 2005), a school of forming and developing the competencies. Contemporary pedagogy, pedagogy for competencies provokes all educational agents in a debate on the future and sustainable applications, where knowledge becomes full value if they are integrated with certain capacities and skills in the application structure, in problem solving or in situations created by daily life. Hofmann (2008) describes the term learning to learn as the most important and vital one for people trying to cope with the changing world. He considers this competency as a "method-in-action" and argues that people have to engage the method itself. On the other hand, Candy (1990 apud Hofmann, 2008) describes learning to learn as a competency that allows people to become more efficient, flexible and self-organized learners in a variety of contexts. The learning to learn competency is understood as a meta-

competence (Hofmann, 2008), because it has an impact on the selection, implication and acquisition of other competencies for 21st century.

Among all the basic competencies, more or less possible to be built at the discipline level, the learning to learn competency requires the most complex approaches, being varied according to the features of every European educational system. The most advanced concerns regarding the approach and development of learning to learn competency have been reported in European documents.

The starting point for an attempt to define the learning to learn competency is the manner and context of theoretical and conceptual framework of the definition and selection of the competency as a holistic concept (DeSeCo). In other words, the learning to learn competency is one of the key competencies and necessarily implies the general characteristics of all competencies. The concept is a change in the understanding of the learning process, which previously focused on achieving the measurable results (defined as knowledge), then on the objectives (premise for the development of purpose) and finally, the concept of competencies (which allows us to consider the learner in terms of systemic and multilevel influences and interactions).

Following the issue of European recommendations was designated a group of experts to design a framework for assessing the learning to learn competency (Expert Group set by the European Network of Policy Makers for the Evaluation of Education Systems, 2006). The framework is based on the assumption that "learning to learn" contains two dimensions: cognitive and affective. In 2008, the Centre for Research on Lifelong Learning (CRELL) published a revised framework for measuring the learning to learn competency, presently used (Hoskins, B., Fredriksson, U., 2008) and in which they added a new dimension, the metacognition. Thus, according to Hoskins and Fredriksoon (2008), the concept of learning to learn is studied to envisage an European framework and test to measure the expression "learning to learn". Such an European framework model is based on three dimensions of learning to learn: cognitive, affective and metacognition. This model shows, however, a practical difficulty, which is an accurate measurement of cognitive and metacognitive dimensions. The problem is risen by other specialists as well and it is linked to the very close relationship or even overlapping of "learning to learn" competency with intelligence, problem solving and learning strategies (Lucas, B., Claxton, G., 2009).

Analyzing over 90 studies using the concept of "learning to learn" and identifying over 40 definitions, C. Stringher emphasized that there are many other concepts included in "learning to learn" such as: metacognition, assessment and lifelong learning from the socio-constructivist, socio-cognitivist and socio-historical perspectives (Stringher, C., 2014). Thus, the

author proposes an improved model, based on the Hoskins and Fredriksson model, in which along with the three dimensions (cognitive, metacognitive and affective-motivational) she adds another two: the capacities genetically inherited (genetic abilities, aptitudes and the innate desire to learn) and the learning dispositions (understanding the meaning, creativity, strategic awareness, learning relationships, resilience). The author includes these within the personal area and also takes into account the social field area with its social dimension.

The proposed model is a complex one showing the links between dimensions of competency and personal and social areas. It also shows the connections and interactions with the lifelong learning dimension. The author proposes a new definition of "learning to learn" competency as "executive process of control of learning, conceivable as a disposition to engage deeply in learning, which bestows individuals with increasingly higher command over modes, time and spaces of their own learning. Such a process evolves in a developmental and lifelong trajectory, with the ultimate goal of making sense of reality" (Stringher, C., 2014).

Learning to learn is a meta-learning which means it is a self-motivated, a self-directed learning towards lifelong learning. The learning to learn competency consists in that students are able and prepared to establish independent learning objectives, to plan appropriate stages in learning, to find relevant information for learning, to solve problems, to reflect critically on the learning process, individually or with others. The learning to learn competency includes processes such as the individual's specific learning needs assessment, goals setting for learning, choosing effective learning strategies and monitoring progress toward learning goals. Consequently, the learning to learn competency involves cognitive, metacognitive and non-cognitive aspects about learning.

In Romania a research of the Institute of Educational Sciences (2008-2009) highlighted the ways in which teachers define the student that knows how to learn and the way in which they perceive producing effective learning at students as well as its contribution to this result. The survey data showed that information management is the most represented quantitatively and more exposed component, as evidence of the ideal profile of the student that knows how to learn. The motivational and attitudinal dimensions, motivation and confidence to pursue and succeed in lifelong learning are poorly acknowledged. According to teachers the elements facilitating effective learning are as follows: the variety of resources and learning activities; the quality of content presentation given by graphical representation of the ideas; the activating students' prior knowledge; the valorisation and exploration of learning outcomes; the control of teachers on students activities; the socio-cultural climate of the classroom; the balance between individual activities

and group tasks; the students' ability to work in groups; the students' mastery learning techniques that lead to self-directed learning; the application of the teachers' indications; the formative assessment based on constant learning support and not on stressing and penalizing the errors; the student motivation for learning through interactive teaching strategies and valuing their non-formal learning experiences (Bercu, N., Căpiță, L., 2010).

Based on the findings of this research we suggest, at present, to increase the actions of students' engagement in independent learning, to develop skills for expressing personal meanings and creating personal learning contexts, to take responsibility for planning, organizing, deployment and evaluation of their own learning.

#### **4. An integrative multilevel model for the development of learning to learn competency**

Analysing the diversity of definitions for the concept of competency, as well as the interpretations of the structure "learning to learn", we have established the following definition of learning to learn competency:

*The learning to learn competency represents an integrated ensemble of knowledge, capacities, attitudes, all developed within a particular context by means of reflection and strategy which includes cognitive, metacognitive and non-cognitive resources, in order to be actively and interactively involved in learning situations and efficient task solving.*

The variety of theoretical contributions within the scientific literature dedicated to the learning to learn competency has led us to try to structure a development model of this competency in an integrative and original manner, which should reflect our understanding of the theme. The theoretical model that we suggest articulates systemically the combination of knowledge, abilities and attitudes necessary for the development of learning to learn competency according to the levels of learning taxonomies; it values entirely the processes of critical reflection, of metacognitive reflection and strategic decision making within a socio-constructivist context. Between these internal structural components there is an inter-dependency relation thus one emphasizes the other reciprocally.



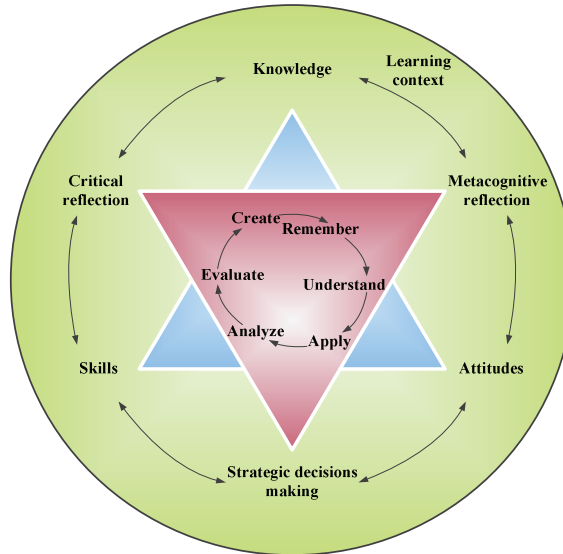


Figure no.1. The theoretical development model of learning to learn competency (Peculea, L., 2015)

For an instructive strategy to be efficient for students, it is necessary to focus on the cognitive, metacognitive and non-cognitive (motivational, emotional and contextual) processes, following a coherent model of action. Many of these approaches are oriented toward some of the above mentioned aspects, but not toward all of them. The challenge that we introduce is to apply a model as complete as possible.

We were also concerned that our theoretical-applicative model designed and experienced by us during further formative interventions for students with learning difficulties to be characterized by:

- *structural relevance*, ensured, on the one hand, by the introduction within the model of the cognitive, metacognitive and non-cognitive dimensions, which are intrinsic and complementary in every learning process, and, on the other hand, by the introduction of the main components of the competency (knowledge, abilities, attitudes), considered as fundamental in the scientific literature;

- *functional relevance*, through the identification of the conditions and practical approaches so that to support the development of learning to learn competency.

In the following we bring some arguments underlying the construction of the theoretical model and on which we based the application of our future educational intervention program.



The context for formation and development of competency represents the integrative set of conditions and interactions where a certain activity takes place and influences, directly or indirectly, that activity. The socio-constructivist dimension of context, as emphasized in this model, underlines the social nature of knowledge, based on social interactions, plus the influence of culture, time and space in which knowledge construction occurs. It is, in fact, a co-construction, a collective organization and construction, facilitated by group interactions and language, through cooperation and mutual collaboration. The students are placed systematically in learning situations likely to generate beneficial cooperative learning experiences for learning activities, to form and develop the competencies.

The more recent Bloom's revised taxonomy (Anderson et al., 2001) regards both what students know (types of knowledge) and what they think about what they know (cognitive processes). Because of the well-known importance recognized in learning process, metacognitive knowledge was added as the fourth category in Bloom's revised taxonomy 2001 (Krathwohl, 2002). In Anderson's taxonomy we find the levels of learning corresponding to three stages of the development of the competency. Thus, the first two levels in Anderson's taxonomy (to remember and to understand) are *the initial/emergence stage* of the competency, being in process of development, the next two levels, *the development stage* (to apply and to analyze), and the last two levels (to evaluate and to create) having the equivalent in *the consolidation and validation stage* of the competency (Peculea, L., 2015). The model of competency could be integrated in the taxonomy model for explaining how the competency evolves.

A teacher is a facilitator of learning and has the responsibility to encourage students to reflect on the material presented, to integrate it into their own cognitive system in systemic vision, to relate to what they already know, to try to make sense of new knowledge in their vision, to identify opportunities to apply and explore it in the future. By doing so, the student not only discovers new knowledge and creates the meanings, but also builds the knowledge, strengthens its own cognitive and metacognitive abilities. Students will be able to achieve constructivist approaches to the extent that the teacher ensures that teaching, learning and assessment processes are not limited to providing information (what to learn). The teacher supports/guides/helps students to learn (how to learn) and to think, while students practice their high, active, logical, analytical and critical thinking skills in the activities of analysis, synthesis, evaluation, problem solving.

Reflection is a cognitive process through which students become aware of what took place during the learning process (Ngeow and Kong, 2001). The authors state that there are two types of reflection activities: 1) the emphasis is on content issues as student believes that needs to know about a

specific task or area; 2) the focus is on the student's learning in general, such as, for example, if the student understands or not the task objectives. Critical thinking is "a habit of mind characterized by comprehensive exploration of the issues, ideas, artefacts and events before accepting or formulating an opinion or a conclusion" (Rhodes, 2010 apud Colley, B.M., Bilics, A.R., Lerch, C.M., 2012). The concept of reflection transversely crosses the disciplines in ways that lead to a deeper understanding and reflection. The skills needed to think critically about the material presented, to reflect on the information provided are the same in any discipline. Learning is enhanced by *critical reflection* which involves to create the meanings, to evaluate deliberately, to make inferences and analyse concepts. As educators, we need to facilitate critical reflection to allow students to go beyond a superficial understanding of their world toward a deeper and meaningful learning. Trilling and Fadel (2009) define critical thinking as "ability to analyse, interpret, evaluate, summarize and synthesize information" (Pacific Policy Research Center, 2010).

Critical thinking means "to get ideas, to examine their implications, to subject them to constructive skepticism, to put them in balance with other opposing views, to build systems of arguments supporting and giving them consistency and to take a position on these structures; critical thinking is a complex process of creatively integrating ideas and resources, and of reconceptualization and reframing concepts and information" (Steele, J. L., Meredith, K. S., Temple, Ch., 1998). It involves a process of internal reflection on the meaning and significances of information and statements, with careful examination of the existing evidence and provided reasoning.

It is obvious that such a capacity does not develop by itself, but it should be practiced and encouraged in a proper learning environment. Critical thinking is not learned effectively when separated from the general context of the syllabus or daily life. Otherwise it is not something you can teach out of context, as it is not a separate discipline. The learning of critical thinking skills is done efficiently when new knowledge is approached in this way. The educational model for developing critical thinking is based on some general principles, one of them referring to the specific framework of teaching and learning, namely the existence of three stages/phases: Evocation, Realization of Meaning and Reflection, considered prerequisites for exercising thinking.

If one of the goals pursued in the process of teaching is that students find personal connections with what they are learning, then there should be used, at least occasionally, methods and techniques which encourage the student to reflect on the material he read or studied, to report it to his life, to phenomena, to his own experience, to facts and events that may be

associated with the information studied and, largely, have an impact on world conception.

Providing students critical thinking questions can stimulate reflection, and, in turn, leads them to metacognitive activities using reflection on the quality of learning and understanding other related issues. Although many have reported that critical thinking is closely related to metacognition and have speculated that supports of critical thinking promote metacognition, there are only a limited number of empirical research on the association between critical thinking and metacognition, particularly experimental research.

Reflection on thinking and processes implies students thinking about thinking (metacognition), about actions and processes, as well as transfer of knowledge in new contexts and creating alternatives or opening new possibilities. According to Candy, Harri-Augstein and Thomas (1985), ***metacognitive reflection*** is "a specific approach which allows students to analyze their own learning process in a systematic manner and to discover their personal hypothesis and constructions of what they are producing as a way for students to identify and question their own strategies."

Cornoldi C. (1998) approaches the issue of metacognitive reflection and its components. The metacognitive reflection is people's own beliefs and interpretations about their own cognitive activity. It is objectified in two important aspects: metacognitive knowledge and metacognitive conceptualization of a task. Reflection is a more general term than metacognition. In reflection, the student engages in an active, persistent and careful analysis of ideas in order to search a deeper understanding, a broader and more motivated perspective. In the scientific literature, almost all strategies for improving the metacognition contain elements of reflection and also require a certain degree of introspection, self-awareness and self-knowledge (Tarricone, P., 2011). Reflection is an intense personal experience. Some students consider the reflection as an uncomfortable process. They exhibit resistance integrating affective and metacognitive elements of learning, but preferring to work only in the cognitive domain that they would find less challenging. On the other hand, reflection is a difficult process because the student has to formulate judgments about their own learning, which means that it is possible to change their learning style. In this case, it seems safe not to reflect because the student does not want to change what is wrong and what he/she learned up to that point. While some students have difficulty recognizing discomfort and do not accept reflection, others are able to reflect beyond their initial discomfort and concerns. As a strong link between thought and action, reflection can provide information about the results and effectiveness of selected strategies, thus making it possible for a student to gain strategic knowledge from specific learning

activities. Because the metacognitive knowledge could be considered as a "static" knowledge regarding the variables related to task, itself and strategies, reflection is considered to be a more "active" exploration and discovery (Ertmer and Newby, 1996). The students, especially those who have learning difficulties, find it difficult to reach a higher level of reflection, query, metacognition, without an explicit model. Therefore, we believe that the role of teacher guiding student learning activities must be doubled by the practice of new competency - that of *reflective teacher*. The teacher should give students a model of reflection and action on the proposed tasks, when the student is asking.

Several researchers (Butler, 2002; Schraw, 1998) emphasized the importance of understanding to use the learning strategies. In addition to several types of strategy instruction, students need to acquire knowledge about how, when, why and where to apply these strategies (Veenman et al. 2006 apud Dignath, C., Büttner, G., 2008). In this sense, reflection is a facilitator factor to internalize, to appropriate effective learning strategies and to apply them successfully in various learning situations. ***Decision-making process*** is used for choosing a working method, a technique or a strategy. The process of adopting a decision to use a particular learning strategy has a common operational scheme with other decisions, which consists of several steps (Dulamă, M. E., 2009): gathering information about each action alternative; processing and evaluating the relevance and representativeness of the information collected; comparing the alternatives on the basis of an optimal matching; evaluating the win-loss report associated with each variant; formulating the option for one of the variants; implementing the option in decision. Decision-making is part of problem solving as decision making occurs at each step in the process of problem solving. Stimulation of the decision-making process develops students' ability to perform independently tasks, to take responsibility for their own work, to formulate options and evaluate alternatives, consequences, to complete correctly organized systematically tasks. In this context, teachers should be aware of their personal resources enabled in decision making, specific trends of certain categories of students in certain subjects of study and be able to report the effects of strategic decisions on school performance and student learning.

So, the competency is closely linked to processes of reflection and decision-making (refers to strategic knowledge), supported by developing of an intention or involving in rehabilitation and coordination of student resources. Therefore, it is necessary to teach metacognition and to form the "metacognitive attitude" which consists in "general inclination of the subject to reflect on the nature of his/her own cognitive activities and to recognize the possibility of using and expanding it" (Martini, B., 2007 apud Ardelean,

A., Mândruț, O., 2012). A constant concern of teachers should be to stimulate students to reflect on their learning process so that they become aware of their strengths and weaknesses, which they can compensate by personal ways to explore the information through personal management of information and knowledge, and thus effectively managing their knowledge.

## **5. Conclusions**

So this new model proposed by us for the development of learning to learn competency articulates the following components relevant from an educational perspective and, in particular, relevant for the psychopedagogical issues investigated by us:

- ✓ Critical reflection (cognitive dimension) - referring to activate existing knowledge and cognitive skills and to apply them in new situations, to analyse, to evaluate, to create of opinions and conflicting interpretations;

- ✓ Metacognitive reflection (metacognitive dimension) - which emphasizes awareness and regulation of their thinking processes;

- ✓ Strategic decision-making (non-cognitive dimension) - which refers to the selection, adaptation, application of learning strategies, the student having to make a choice or successive elections of the optimal variant or at least suitable one.

We believe that promoting the learning to learn competency should not be done only at a philosophical level, but it should be explored from the methodological and practical-action point of view. Thus, to support the students' learning autonomy, teachers should constantly have in mind the overall picture of the actions which have to follow an individual engaged in learning to learn. They also should have a clear picture of the learning situation of each student on identifying learning outcomes in relation to the purposes of school activity, on knowledge and understanding of preferred learning strategies, the strengths and weaknesses of their competencies. It is also need to provide the learning opportunities where students can practice their reflective and strategic learning skills.

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