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Teaching of Thinking

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Abstract

Thinking is considered the foundation of everything we can do it. Every action, every solution, and every decision that is the result of thinking. We think when we decide what to eat for lunch, how to meet a project schedule, and what to say during a conversation. We think when we drive a car (although, unfortunately, we're not always thinking about driving). We are thinking all the time, and although not always filled with valuable thinking, our brains are in gear. Even when we are sleeping, we are thinking. As teachers teaching of thinking skills requires to intervene at the level of the mental process and teach individuals what processes to use when , how to use them, and how to combine them into workable strategies for task solution . The current paper aims at showing the main characteristics of Thinking, thinking in a context, and components of thinking.

Keywords: Thinking, teachers' professional, skills, strategies, Higher- Order Thinking

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1. INTRODUCTION

In our mind, there are two aspects: the information that can store in the memory, and what we can do it. Technical or professional knowledge usually involves need knowledge about a subject but we also need to be able to both. Not only we apply it in a different kind of unforeseen .

Further, an information- processing approach underpins most current approaches to the teaching of thinking. The focus is on the 'how' of thinking is clearly important for all learners, not only in terms of the strategies engaged in a learning task, but in the views of self while learning.

The importance of this process approach is emphasized in relation to the learner dealing with frustration in an inclusive setting. Changing from a product-oriented approach to a process-oriented approach includes comparing the learner's leaning progress to his/ her own previous progress, rather than to that of others [12, 14, 16, 20, 25,27,29].

Within the index for inclusion a key aspect of the inclusive culture is having high expectations for all learner.

2. TEACHING OF THINKING

It involves teaching learners about their mental processes and how these can be used for problem solving. Teaching of thinking made up of three main types of approaches :

1.The skills type of approach that means teaching various thinking means, such as strategies, that render thinking process more effective, fast and precise.

2.The dispositions type of approach which refers to a reasoned motivation for a certain thinking pattern ,a thinking quality such as open-mindedness, depth, systematic thinking.

3.The understanding type of approach which makes clear conditions under which knowledge becomes understanding.

Teaching of thinking enables learners to develop their own self-monitoring and self-regulation of learning, and to manage their own metacognition. The development of self – regulation is a cornerstone of learner autonomy and lifelong learning, which involves the learner in being active and responsible, rather than passive.

We need to recognize the partnership of learners in their learning , and the development of their self-agency, in the legislation which underpins our education. We need to know that self- management of learning and thinking is the key rationale for the teaching of thinking , and for addressing the learning needs of all learners [11,13,15, 19, 21].

3. THE VALUE OF THE TEACHNING OF THINKING

Where teacher attitudes have been explored in association with the use of an approach to the teaching of thinking, the value of this for their professional development is usually affirmed.

Similarly, international studies on progress towards inclusion generally identify teachers' professional development as a key related issue.

The index for inclusion stresses the importance of collaborative professional development activities for support to teachers in meeting the needs of all learners. When we have the responsibility of meeting a great variety of learner needs in an inclusive classroom, we ourselves experience professional and personal challenges and needs, which should be addressed by professional development and support.

Changing teachers' minds should be alongside with changing learners' minds. Inclusion is seen as improving schools for staff as well as for students'. The preparation for, and experience of, the teaching of thinking , should be professionally and personally enriching for all of us, and encourage the fullest development of our own unique teaching and research strengths.

Thinking is something we do every day, something will happen to make us asking what we need. We are read an editorial and wonder if the writer is giving us all the facts we decide to write paper or a book and realize that we must organize and evaluate a body of information and concepts and must reach some conclusions.

thinking can be influenced directly by pedagogical

interventions". Conscious thinking is our concern. Conscious thinking is a term that is difficult to define and one that is we all see. It is self-directed, in which the learner plays an active role. Conscious thought enables the comprehension of others' ideas and the generation of new ideas.

Teachers have generally assumed that student a would think if they could and, therefore, concentrated instruction on developing skills and strategies in the basic skill areas of reading, writing and arithmetic as well as on disseminating knowledge in the content areas.

There is a growing recognition that education consists of much more than teaching basic facts and skills. There is a concern that we need to teach thinking skills and strategies and we are doing very little in that area. There is also a concern that much of what we are doing may be counterproductive.

Let's consider some examples of current definitions and descriptions that could be used at particular learning tools for a qualitative education:

1. Costa: thinking is the receiving of external stimuli through the senses followed by internal processing.
2. Sigel: Thinking is regarded as an active process involving a number of denotable mental operations.
3. Presseisen:Thinking is generally assumed to be a cognitive process, a mental act by which knowledge is acquired.
4. Ruggerio: thinking is a mental activity over which a person exercises some control.
5. Halpern: most people would agree that thinking is complex and that it guides our behavior . in addition, thinking is dynamic process. It involves going beyond the information given.

4. CHARACTERISTICS OF THINKING

Thinking is a natural, active process; it occurs within both a physical and personal context; it is influenced by society, requires prior knowledge and the ability to represent knowledge , and is recursive.

In figure 1 are presented the characteristics of thinking that should be adopted in educational materials especially in fields about sustainability, environmental health education and associated fields for sustainability and public health protection. Also proper educational utilities, associated e-learning tools could be used including uploads of relative digital linguistics content for students and staff working around sustainable development and public health protection [1,8,9,10,17,18,22, 26,27,28].

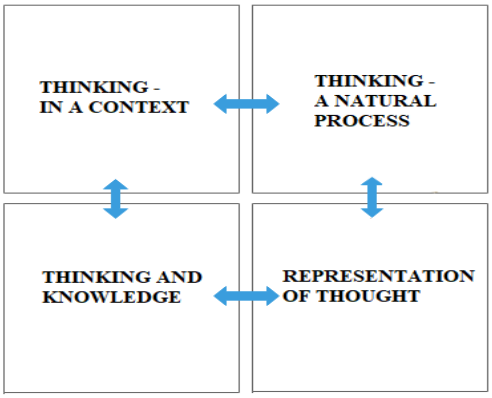

Figure 1. Solutions in Sustainable Environmental Educational Thinking for sustainability and topics around public health protection

Based on figure 1, the next topics are analysed for qualitative educational materials epsecially around environmental health , sustainability and public health protection at post covid-19 pandemic era.

4.1 Thinking: A Natural Process

Thinking occurs naturally as breathing. Baer reviews research here and concludes the evidence that much thinking is defined not via cultural transmission but is instead built into the architecture of the brain, is growing rapidly and cannot be dismissed lightly.

4.2 Thinking in a Context

The thinking process occurs within both a physical context and a personal context. The personal context by including the individual's inclination and willingness to take risks and commitment to engage in thinking. Influence of Society

There is agreement that the thinking process is influenced by the society and culture in which the

individual exists. Exactly how that influence is expressed differs according to various experts in the field.

4.3 Thinking and Knowledge

The thinking process requires prior knowledge, the memory of it , and the use of that prior knowledge. Thinking can be limited by lack of experience and knowledge. One's ability to think effectively within a specific domain will be severely limited if one knows little about that domain. Prior knowledge is not sufficient. Thinking requires the ability to find that prior knowledge in memory when it is useful and integrate it with new information.

4.4 Representation of thought

The thinking process requires language to formulate and express thought as well as the ability to develop representations of knowledge and concepts.

5. COMPONENTS OF THINKING: SKILLS AND STRATEGIES

The variety of definitions of thinking has given rise to differing views of what is needed for thinking to occur effectively. However, there are some common components that are included in most discussions of thinking. The skills and strategies used, the focus or content, and the outcome or product are frequently cited as components of thinking. It is critical, though, to stress at this point that these components do not operate in isolation but are interrelated and connected.

It seems simpler and more direct to discuss them separately but that does not reflect reality. While it has been convenient to discuss separately each of several aspects of thinking on which efforts to develop training methods have focused, it must be apparent that these aspect are interdependent in many ways.

5.1 Skills

The first component, thinking skills, is basic to the concept of thinking because it includes what the thinker needs to do in order to accomplish the task. A skill can be defined as a "mental activity that can be applied to specific tasks". Various theorists might be categorized according to the perspective they adopt in viewing skills. They must view skills in various ways: the thinker and what he does; the demands made on the thinker by the information processing requirements of the thinking task; or the complexity of the thinking task itself.

First, consider identifying thinking skills according to the approach taken by the thinker. There are two types of thinking, one characterized by such descriptors as analytic, deductive, rigorous, constrained, convergent, formal, and critical, and the other by synthetic, inductive, expansive, unconstrained, divergent, informal, diffuse, and creative.

A second approach considers the information processing demands generated by the information and how the information is organized and represented. Marzano for example, has identified thinking skills according to how information is organized, processed, understood, and remembered. He includes, as skills , recognition of concepts, relationships, and patterns; reconstruction, evaluation, and extrapolation of information; problem solving, and knowledge of basic input/ output processes, content- specific tasks, and of the self as learner [23,24,25,29,30].

Other, supporting a levels approach based on micro and macro level skills**,** also may view the skills as hierarchical with more complex skills building on, in some fashion, the basic, essential or simpler skills.

In reviewing the information processing thinking skills demanded by tasks, emphasizes that these thinking skills " are not presented in a hierarchy"

The content areas to thinking skills and suggest that the particular content area may influence whether thinking skills are hierarchical and should be so taught.

There may not be some predetermined and unchangeable relationship between micro and macro level skills, but rather a relationship determined by the demands of the specific content area.

5.2 Strategies

The next component to consider in our definition of thinking is that of the processes or the strategies the thinker uses. To make students good strategy users and lifelong learners we need to teach them how to be in charge of their thinking. We cannot possibly teach students all they need to know to even function and survive in the world today.

We not only need to teach students the strategies themselves but also how to select appropriate strategies for a particular task and when and how to use them during the task.

In all of this, students need to be metcognitively aware and in charge of monitoring and managing their

strategy use. In examining this component of thinking we need to look at what the categories of strategies are, how thinkers learn to select and use strategies, how they transfer the strategy to other domains, and finally , what conditions are needed for effective strategy training.

6. CONCLUSIONS

Primary strategies are used to operate on the text material directly, such as comprehension and memory strategies; these may have a direct impact on the target information. Support strategies, on the other hand, are those used to maintain a mental state amenable to learning, for example concentration strategies; these may have an indirect impact by improving overall level of the learner's cognitive functioning.

There are two approaches and divide strategies into four categories: cognitive information- processing strategies, active study strategies, support strategies, and metacognitive strategies.

Moreover, cognitive strategies could be used. For thinking, organization and reorganization of information and ideas is a critical cognitive. The essential characteristic of strategies is that they help guide the search for organization of information". This includes three components of thinking ,organizing prior knowledge, new knowledge and integrating the two. The use of organizational strategies can help thinkers to identify and clarify relationships between information and ideas and including linking new information to new information.

Teaching students ways to devolve and use the graphic organizers has been found to be particularly effective. "Concrete representations can crystallize or give form to concepts and procedures" The use of graphic organizers as "spatial learning strategies", and advocate the use of frames and graphic outlines to locate information, select important data, to relate information from different aspects, to link new knowledge to the prior knowledge and to restructure prior knowledge. Successful using of graphic organizers according to Jones et al., requires to explicit instruction in identifying key structural elements, using appropriate organizers, and working in groups using cooperative learning [2,3,4,5,6,7]. Educational material should adopt proper e-learning tools, visual reading, training material for stakeholders at post covid-19 pandemic era.

Based on the above the educational particular applied educational strategies must be suitable to the learners' characteristics, must be accounted for difference in domain knowledge, level of development, and learning disabilities and differences. They must suit the type of the text as well as learning outcomes anticipated. For example, organization strategies in the field of reading in which organizers can use include knowledge and use of the structure of a text, recognition and use of cue words, and the selection of the main idea.

Deterring which cognitive strategies are useful to teach requires to identify strategies that experts use and use them as a basis for teaching, especially in topics about sustainability and public health protection at post covid-19 pandemic era.

REFERENCES

[1] Aljaafreh, A., & Lantolf, J. P. (1994). Negative feedback as regulation and second language learning in the Zone of Proximal Development. The Modern Language Journal, 78(4), 465–483. https://doi.org/10.1111/j. 1540-4781.1994.tb02064.x

[2] Vakilifard, A., Bahramlou, K., Mousavian, M. (2020) The effect of cooperative learning approach and semantic mapping strategy on the acquisition of L2 Persian vocabulary, Cogent Education, 7:1, 1762287, DOI: 10.1080/2331186X.2020.1762287

[3] Jones, R. C. (2006). Strategies for teaching reading comprehension. http://www.readingquest.org/strat/graphic.html

[4] Jabbari, S. (2005). The effect of metacognitive reading through cooperative learning approach on the reading comprehension of late learning children. Journal of Social and Human Sciences of Shiraz University, 22 (4), 82–93.

http://ensani.ir/file/download/article/20110226101942.pdf

[5] Hosseini, Z. (2009). Collaborative learning and critical thinking. Journal of Developmental Psychology: Iranian Psychologists, 5(19), 199–210. http://jip.azad.ac.ir/article_512345_8175a5f34debc4a32c8f51d7de42e54a.pdf

[6] Lantolf, J. P., & Poehner, M. E. (2008). Dynamic Assessment. In E. Shohamy & N. H. Hornberger (Eds.), Encyclopedia of language and Education, Vol. 7, 2nd ed., pp. 273–284,. Springer Science Business Media, LLC.

[7] Morgan, M. (2003). Welcome to exemplary practices in vocabulary instruction. www.bridgew.edu/Library/CAGS_Projects/MMORGAN/ web %20page/literature%20review.htm

[8] Onwuegbuzie, A. J. (2001). Relationship between peer orientation and achievement in cooperative learning-based research methodology courses. The Journal of Educational Research, vol. 94(3), pp. 164–170. https://doi.org/10.1080/00220670109599913

[9] Saeidi, M., & Atmani, S. (2011). Teaching vocabulary through semantic mapping as a pre-reading activity across genders. JournalofEnglish Studies, Islamic Azad University, Science and Research Branch, vol. 1(1), pp. 51 – 64 http://jes.srbiau.ac.ir/article_5621_3f1fc709c786af3ef00dd413b871c819.pdf

[10] Singhal, M. (1998). A comparison of L1 and L2 reading: Cultural differences and schema. The Internet TESL Journal, 4(10). http://iteslj.org/Articles/SinghalReadingL1L2.html

[11] McConnell, D. A., Steer, D. N., Owens, K. D., & Knight, C. C. (2005). How students think: Implications for learning in introductory geoscience courses. Journal of Geoscience Education, 53(4), 462–470. https://doi. org/10.5408/McConnell_v53p462

[12] Stahl, S. A., & Vancil, S. J. (1986). Discussion is what makes semantic maps work in vocabulary instruction. The Reading Teacher, 40(1), 62–67. https://www.jstor.org/stable/20199306?seq=1

[13] Vaezi, S. (2006). Theories of reading. http://www.teachingenglish.org.uk/think/articles/theories-reading.

[14] Vakilifard, A., & Madani, R. (2002). Reading and comprehending Persian by foreign students. Parak Publications.

[15] Amoush, K. H. (2012) The effectiveness of using "semantic mapping strategy" on reading comprehension of Jordanian university students. Interdisciplinary Journal of Contemporary Research in Business, vol. 4(6), pp. 714–729. https://journal-archieves24. webs.com/714-729.pdf

[16] Carini, R. M., Kuh, G. D., & Klein, S. P. (2006). Student engagement and student learning: Testing the linkages. Research in Higher Education, 47(1), 1–32. https://doi.org/10.1007/s11162-005-8150-9

[17] Yodiansyah, H., Yuzalmi, N. Koliopoulos, T. (2019) Consultation Comparative Study: Communicative Language Teaching (CLT) Principles in the difficulty is that among a wide range of textbooks in the MMCs, vol. 2, pp. 45-53, Journal of Emerging Environmental Technologies and Heath Protection, ISSN 2623-4874, e-ISSN 2623-4882 https://www.telegeco.gr/2_4.pdf

[18] Koliopoulos, T., Kouloumbis, P., Hilcenko, S. (2019) Community Health Infrastructures and Medical Sports Facilities to Prevent AD Disease for Elderly People, vol. 2, pp. 83-94, Journal of Emerging Environmental Technologies and Heath Protection, ISSN 2623-4874, e-ISSN 2623-4882 https://www.telegeco.gr/2_7.pdf

[19] Khamesan, A., & BaradaranKhaksar, Z. (2011). Comparison between collaborative and individual concept mapping with the traditional method in teaching English. Foreign Language Research Journal, 1(1), 57–75. https://www.sid.ir/fa/journal/ViewPaper. aspx?id=160631

[20] Schmidt, R. (1990). The role of consciousness in second language learning. Applied Linguistics, vol. 11(2), pp. 129–158. https://doi.org/10.1093/applin/11.2.129

[21] Neisi, A., Najarian, B., & Sheikhiani, M. (2004). Comparing the effect of cooperative learning and traditional teaching on the academic achievement, learning, progress motivation, and self conception of grade 2 high school students of Bushehr. Journal of Psychology and Educational Sciences, 11(3– 4), pp. 25–44. https://www.sid. ir/fa/journal/ViewPaper.aspx?id=11364

[22] Rumelhart, D. E. (1980). Schemata: The building blocks of cognition. In R. J. Spiro, B. C. Bruce,&, & W. F. Brewer (Eds.), Theoretical issues in reading comprehension (pp. 33–58). Erlbaum.

[23] Mei Heong, Y., Binti Othman, W., Bin Md Yunos, J., Tze Kiong, T., Bin Hassan, R., Mohaffyza Binti, M. Mohamad (2011) The Level of Marzano Higher Order Thinking Skills among Technical Education Students, International Journal of Social Science and Humanity, Vol. 1, No. 2, pp. 121-125.

[24] Tee, T. K, Yee, M. H. (2010) , The Level Of Higher Order Thinking Skills For Technical Subject in Malaysia, Proceedings of the 1st UPI International Conference on Technical and Vocational Education and Training, Bandung, Indonesia.

[25] Marzano, R. J., Pickering, D. J., Arredondo, D. E., Blackburn, G. J., Brandt, R. S, Moffett, C. A., Paynter, D. E., Pollock, J. E., Whisler,J. S. (1997) Dimension of Learning Trainer's Manual, 2nd Ed, Aurora, Colorado: McREL.

[26] W. S. Toh, (2003) Student-Centered Educational Beliefs and Teacher Education, Journal Penyelidikan.

[27] A. K. Ng, (2004) Liberating The Creative Spirit In Asian Students, Singapore: Prentice Hall.

[28] Wilson, J., K. Murdoch, (2008) Helping Your Pupils to Think for Themselves, Australia: Curriculum Corporation, pp. 1.

[29] Ea, A. Chang, , J, Tan, . O. S. (2005) Thinking about Thinking: What Educators Need to Know, Singapore: National Institute of Education, Nanyang Technological University, McGrawltill Education, pp. 72.

[30] Lewis, A. Smith, D. (1993) Defining Higher Order Thinking, Vol. 32, pp. 131-137, Theory Into Practice.