FOSTERING REFLECTIVE WRITING BY STRUCTURING WRITING-TO-LEARN TASKS

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Abstract. Mature learning and thinking requires a reflective disposition. Due to the relation of writing in general, and reflective writing in particular, to knowledge production – writing may foster reflective learning and thinking in various academic domains. However, while adults may be either inclined or trained towards writing-to-reflect, children need to be educated to engage in it. The aim of the technique presented in this chapter is to offer a strategic framework for structuring & facilitating reflective writing for school children. It comprises nine writing-to-reflect acts: (1) Coordinating expectations from the learning resource at hand; (2) Relating it to prior knowledge; (3) Detecting & diagnosing difficulties in it; (4) Selecting relevant knowledge; (5) Judging the value of the learning source critically; (6) Deliberating its optional interpretations; (7) Transforming its structure conceptually; (8) Re-contextualizing the newly gained knowledge; (9) Linking: Assessing learning outcomes & creating new learning goals. The learners use these nine 'reflection stops' as optional writing opportunities. They select one or several of the 'stops', and start writing about a text they learn from, 'entering' and 're-entering it by performing the reflective acts each selected stop entails. Wide use of this technique from second to seventh grade has shown that the majority of children & teachers may benefit from using it – when it is introduced gradually and exercised flexibly and judiciously.

Keywords: reflective writing; reflective thinking; writing-to-learn; writing instruction; writing techniques

1. THEORETICAL FRAMEWORK

1.1 Introduction

Mature learning and thinking requires a reflective disposition, which Perkins (1995), following Paul (1994), characterizes as high-investment commitment to complex tasks across multiple frames of reference. Due to the relation of writing in general (Bereiter & Scardamalia, 1987; Galbraith, 1999), and reflective writing in particular (Sarig, 1996) to knowledge production – writing may foster a reflective disposition to learning and thinking in various academic domains (Aspinwall & Miller, 1997;

Sarig, G. (2004). Fostering reflective writing by structuring writing-to-learn tasks. In G. Rijlaarsdam (Series Ed.) and Rijlaarsdam, G., Van den Bergh, H. & Couzijn, M. (Vol. Eds.), Studies in writing, Volume 14, Effective learning and teaching of writing, 2nd edition, Part 3, Studies in writing-to-learn, 499- 517.

Deloney Carey, & Geeman, 1998; Prescott, 2001; Swartzendruber-Putnam, 2000). However, while adults may be either naturally inclined or professionally trained towards writing-to-reflect, children need to be educated and encouraged to engage in it.

In this chapter I will present and demonstrate the *'Reflection Cycle'* (Sarig, 1997), a technique offering a strategic framework for structuring, and thus facilitating, reflective writing for school children. It is a reading-writing-thinking technique, which the young writers use to write/think reflectively about a text they learn. It comprises nine writing-to-reflect acts, entitled writing 'stops', each calling for a different writing task.

1.2 Six Theoretical Underpinnings

The broad Pedagogical and Theoretical Rationale underlying the technique, both as a whole, and in reference to particular tasks within it, rests on several theoretical perspectives: semiotic, communicative, cognitive and political approaches to meaning and knowledge making, and a pedagogy inspired by them. The classical and post-modern notions coming from these approaches clearly represent different schools of thought. However, they all converge into one educational goal underlying the technique: *the design of new knowledge* by learners (Shor & Freire, 1990/1987; Sarig, 1996, 2000), whereby learners re-write texts they read.

The first perspective is Charles Saunders Peirce's view of meaning-making as a semiotic process, which he labeled semiosis (Cornbleth 1985; Dewey 1933; Eco, 1979; Siegel & Carey, 1989; Snyder, 1986). Semiosis combines three inter-related principles. First, it is geared towards a quest for *meaning,* rather than truth. This opens up the road to multiple, subjective, and context-bound interpretations of a single knowledge object. The second principle, a direct implication of the first, is the acceptance of and reliance on the ever-transient, cyclical and interpretive nature of meaning-making. This process is motivated by informed skepticism: given that the meaning of a phenomenon under study is context-bound, and that multiple alternative contexts may underlie it, a meaning product is never to be trusted. Each proposed interpretation is critically examined, and then discarded in favor of another, to be replaced in its own turn by yet another one; hence, the transient nature of the products which semiosis yields. The third principle underlying semiosis is an indirect implication of the first two. In semiosis, one focuses on *processes* of reflection, rather than their products. Its goal is to scrutinize meaning-making decision processes reflectively and critically. Its driving force is a persistent skepticism towards the validity of the mental tools used at any given point in the process. Thus, the devalidation of the transient meaning products is only a by-product of the main process. This allows a view of reflective reasoning as a particular case of semiosis, where the phenomenon under examination is thinking itself.

The second perspective is Bakhtin's (1981) portrayal of the meaning-making phenomenon as a dialogic, inter- and intra-subjective appropriation process. This approach puts an emphasis on the *personalization* process involved in tackling incoming linguistic input. According to this view, we actively transform words, inten-

tions & messages of Others to accommodate our own mental world. Thus, in processing texts of Others, we 'appropriate' them, making them our very own. What we may think and write about them, then, will be infused with our unique view of the world, our own voice. It is interesting to note, that this dialogic process is directed both at ourselves and at Others: we deliberate ideas & messages put to us not only by Others, but also by ourselves. Thus, in processing incoming knowledge dialogically, we 'otherize' ourselves just as we personalize others.

The third perspective underlying the *Reflection Cycle* technique is a political view of epistemic authority, inspired by Michel Foucault's political view of knowledge/power (1981). Foucault offers a post-modern deconstruction of traditional conceptions of authoring knowledge, knowing and manipulating others into knowing – maintaining that it is power which defines knowledge as such. Paulo Freire's pedagogy presents a congruent critical view of knowledge and knowing. He argues that meaningful learning can occur only when learners possess epistemic power, with which 'to wrestle' with ideas and texts and 'write' the world (Shor, & Freire, 1990/1987). Hence, the crucial role of educational empowerment processes in developing critical literacy.

The fourth perspective underlying the technique to be presented here comes from constructivism. To begin with, constructivist educators view complex, cognitively-demanding, 'thoughtful' (Newmann, 1990) and 'mindful' (Langer, 1989; 1993; Salomon, 1983) *understanding performances* (Gardner, 1991; Perkins, 1992) as a mainstay of significant learning. Furthermore, they emphasize the crucial role of keen interest in the object of one's study, as well as his or her reliance on relevant personal prior knowledge on which to construct and create new knowledge. This is considered a pre-condition for significant learning (Fosnot, 1996, in Moursund, 1999). Furthermore, learning is viewed not merely as acquiring new knowledge by constructing something new on the foundations of what is already known. Rather, it is conceptualized as *manipulating* extant 'knowledge objects' (Bereiter & Scardamalia, 1998/1996; following Popper, 1972) and *generating* new ones as well. Thus, within this view, learning is conceived of a high-stake, personalized, individual enterprise.

The fifth theoretical perspective has to do with the specific *psychological dispositions* required for successful coping with complex, high-investment tasks. Perkins and his colleagues (Perkins, Jay, & Tishman, 1993; Langer, 1993; Perkins, 1995) make a strong case for the notion of *reflective intelligence* as a psychological disposition. This notion refers to one's ability to use broad-based strategies in a persistent, imaginative, systematic, self-monitoring and self-managing way – so as to tackle intellectually challenging learning and problem-solving tasks. Faccione (2000) defines this ability as open-mindedness, inquisitiveness, analicity, systematicity, and cognitive maturity.

Finally, the sixth theoretical influence on the *Reflection Cycle* technique to be presented in this chapter, comes from the view of writing as way of getting-to-know (Aspinwall, & Miller 1997; Deloney, Carey, & Geeman, 1998; Prescott, 2001; Sarig, 1996; 1997; Swartzendruber-Putnam, 2000). According to this expressionistic view, the mental state of writing generates a consciousness of knowing. In this state we either discover what we did not realize we knew, and/or we create new objects of

knowledge altogether. Thus, one does not necessarily have 'to know' in order to write. It is the other way around: in order to know, one needs to write. Although there is no clear-cut evidence for these claims, (Galbraith, 1999), writers in various domains support it with reports from their authentic writing experiences.

Resting on this diverse rationale, the *Reflection Cycle* technique was developed with the realization that not all learners enjoy or practice a self-initiated disposition for spontaneous, strong-sense reflectivity, or the ambition to put a personal mark on texts written by others. It would rather seem that for other learners, especially children – this cultural habit of mind must be intentionally and explicitly cultivated. The Cycle was thus developed as a set of reflective and critical meaning-making acts, representing what mature learners, who are naturally disposed to critical and reflective learning, do expertly.

2. 'THE REFLECTION CYCLE': A DEMONSTRATION

In this section of the chapter I will describe each stop on the *Reflection Cycle,* and provide examples for its products. The texts, translated from Hebrew[1], were written by fifth and sixth graders from a small suburban elementary school[3].

The first stop on the cycle involves *Coordinating Expectations* from the learning resource at hand (e.g., a printed text of any genre; a play; a movie; a personal experience, etc.). The students working with the *Reflection Cycle* are taught to approach a text with a specific learning-writing goal in mind. In this learning environment all texts brought to class, regardless of genre or complexity level, are subjugated to specific writing goals outside the texts themselves, and are therefore seldom approached solely for their own sake (as they could be when analyzed as wholes for their poetic properties, for instance). The work in this stop helps learners to focus their reading-writing efforts on those aspects of the text, which match their particular learning-writing goals. The purpose of this stop is, then, to approach the text vis-à-vis a specific learning goal in mind. For instance, when writing-to-reflect about Absalom's conspiracy in the second book of Samuel[4], Guy, a sixth grader reminds himself of his learning goal: understanding the role of the three dominant figures in the narrative (text #1):

> In the reflection Cycle on Absalom's mutiny I focused on three dominant figures:
> - Absalom, son of King David
> - King David
> - Joab the son of Zeruiah (chief of David's army)
>
> since I think they are the 'rounded' figures in this story (whether realistic or popular –I wonder), who put the whole story of the mutiny into motion, sure there are other figures related to the mutiny such as: Ahitophel, Hushai the Archite and more...
> Nevertheless I do not think there are other figures with the same status of the three 'heroes' in Absalom's mutiny. (Guy, sixth grade)

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[1] *All texts, except in Figures 1& 2 are translated from Hebrew. In translating the texts, care was taken to maintain the original text segmentation, as well as linguistic, textual and communicative appropriateness level. Similarly, the semantic maps in the chapter (Figures 3 & 4) were formatted as closely as possible to the original source.*

The purpose of the second stop on the Cycle, *Relating to Prior Knowledge,* is to inculcate in learners the intentional habit of mind involved first, in retrieving Prior Knowledge in relation to the text and topic at hand, and second, assessing its quality in terms of relevance, accuracy and completeness. Text #2 (Figure 1) presents a representation of prior knowledge in the form of a semantic map. Having mastered the basic skills involved in semantic mapping, the Anonymous fifth grader who wrote it chose it as a mode of representing his or her extant knowledge on sea & coast pollution – the topic of discourse to be reflected and learned from.

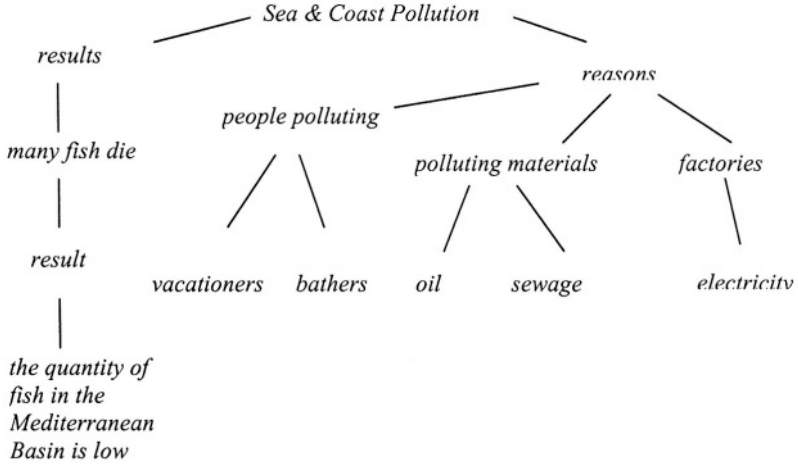

Figure 1. Text #2: A semantic map representing prior knowledge by an anonymous fifth grader.

In text #3 (Table 1, left hand side column), Amit, a sixth grader, reflects on a short poem by Shel Silverstein (1981). His or her text offers a more discursive version of the work done with this stop, showing how the young learner, already at home with the technique, works with this stop spontaneously, in interaction with other stops. Parsing the text into stanzas (Gee, 1996; Sarig 2002), and analyzing the thinking moves underlying each, reveals nine reflective acts, five of which implicate relating the text to prior knowledge. These appear on the right hand side column.

Table 1: Text #3: Integrative Use of the Stops on the Reflection Cycle by Amit, Sixth Grade

Text	*Stop*
(1) In my opinion Shoshi is one of those of our gang who do not try to understand the different (in the case of this story Ariel is the different) and these children sometimes hurt the children severely and sometimes there are cases when they hurt the children less, but they always hurt children, (2) what I really don't understand and I truly do try to understand is how they laugh at the different if all people are different and according to what they decide on the standards of who is different and who is not different. (3) We also always see that the children who got determined as different always try not to be different but for some reason those who are determined as not different will keep on hurting them and probably will never turn them into not different and try to accept those that they decided that they are different so they will turn them too into different. (4) It seems to me that Shoshi could have talked to Ariel if indeed she had wanted to because in the case of the story either there was the teacher or she could have asked his interpreter. (5) Society, which thinks highly of itself, actually does not think of the emotions of others like Shoshi didn't know how Ariel was feeling. (6) I too have a case in which I want to do something, something that up till now only one child in the class has done, and I remember the two or three kids who laughed at him and I am sure hurt him and I am afraid to take the same step, because then they will laugh at me too.	(1) Judging based on re-contextualized prior knowledge (2) Detecting & diagnosing a difficulty (3) Recontextualizing based of prior knowledge (4) Judging based on re-contextualized prior knowledge (5) Judging based on re-contextualized prior knowledge (6) Relating to prior knowledge
(7) According to my opinion Shoshi missed out on a very important message that Ariel tried to communicate to her and she didn't get it (8) and therefore one misses out on beautiful things in life when one doesn't try to understand or when there is no trust between the two.	(7) Judging (8) Transforming & Re-contextualizing
(9) Here in the story it is told about disconnected communication because communication works only when two or more try and make an effort to understand each other...	(9) Transforming

The third stop on the Cycle involves *Detecting & Diagnosing Difficulties* in the text. The first purpose of this stop is to instill in the learners the 'strong-sense' commitment to tackle their difficulties, rather than use them as an excuse to avoid the learning task altogether, as some of them may be inclined to do. It teaches them the habit of analyzing, and thus diagnosing, the sort of difficulty they are facing as a first step toward overcoming it. Working with this stop requires a rich meta-linguistic, meta-strategic database, which, in turn, gets constantly enriched – as the students learn how to analyze, diagnose and label each new difficulty they face for future refer-

ence. In spite of the importance of this stop, culturally it is sometimes hard to convince students of all ages that declaring a difficulty in public, let alone document it in writing, is good for you. In some classes students need to undergo an acculturation process, whereby the members of the class reach an agreement on a series of learning values, which they all commit themselves to respect and adopt.

Texts #4 & #5 below present the work of two sixth graders, who have apparently adopted the value of taking pride in one's ability to spot, analyze and diagnose comprehension hurdles. In Text #4 Sharon lists some difficulties she encountered when reading a poem comparing Man to a tree – in the form of discrete questions:

> 1. What does "nipped" mean?
> 2. Man is "caught in fire [sic], man gets burnt?
> 3. "I feel a bitter taste in my mouth", the tree feels a bitter taste?
> 4. Why is Man "cut off" too, like the tree?
> 5. Stanza 3, what does it want to say?
> 6. Why is it written about the tree of the field that "Where was I and where will I be?"
> 7. Don't we know where we are?
> 8. Why does Man keep thirsty like the tree of the field?
> 9. Thirsty for what?
> 10. Wishing for what?
> 11. What does the poem want to say?
> 12. Why the tree of the field particularly?
> 13. "Buried me", so I am dead? (Sharon, Sixth grade).

In comparison, in text #5 below, Yotam offers a more discursive version of work with this stop. His text allows us to witness the development of his reflective encounter with the biblical affair of the war between the house of Saul and the house of David, in the second book of Samuel:

> The chapter has many open questions for which there are no clear answers:
>
> I did not understand for example why Abner crowned the people of Bosheth king. Whereas when Saul was dead, the king returned the rule to David?
> In addition, I didn't understand how there could be two kings in the people? Was this acceptable at that period? The people would divide into two groups, and each group would have its own king?
> I don't understand what David had been doing for forty years (not taking into consideration the seven years when he ruled the tribe of Judea and Hebron), while Ish-Bosheth ruled over Israel? Was David out of any office?
> Another point I didn't understand was why did Abner kill Asahel? Was it out of self-defence? Couldn't he just ignore the provocation and keep on going?... (Yotam, sixth grade).

As these two different instances show, the activity in this stop puts the authority of raising questions and difficulties back in the hands of the learners. It is he or she who wants to know something (the learner) that asks the questions and raises the difficulties – rather than he or she who knows the answers (the teacher). Thus, in adopting the reflective acts involved in this stop, the young learners take active responsibility for their learning difficulties, and by doing so – actually promote comprehension.

In the fourth stop, *Selecting Relevant Knowledge* from the text, learners construct a knowledge base on which to reflect. Text #6, based on 'The Poor Man's Sheep'

parable, in the second book of Samuel, offers an example for this in the form of a telegraphic gist.

> There was one poor man and he had only one single sheep, which he loved dearly. There was one rich man and he had lots of sheep and cattle and the rich took the sheep away from the poor man (Anonymous, sixth grade; Presented in handwriting).

In comparison, some learners prefer an idea list format.

In some learning contexts, the work with this stop differs from the traditional 'gist', or 'main ideas' tasks in that – as pointed out earlier – the frame of reference for selecting relevant information is the learning task at hand, rather than the text as a whole. This means that it is not the text as a whole that is under study, but rather the topic of inquiry. In this way, only those idea units from the text that can contribute to furthering the knowledge topic of inquiry will enter the database, on which the reflection will take place.

The fifth stop, *Judging,* engages the learners in direct critical thinking. They may use the stop to relate to moral, ethical or logical aspects of the subject matter with which they take issue; they can reflect on the relevance of the text to their topic of inquiry; its interest level, importance and aesthetic value. Text #7 offers an example for the work in this stop. In this text, Yotam reflects on the dramatic struggle between Saul's and David's followers, in a chapter from the second book of Samuel. He first reflects on the credibility of the story, and its relevance to the realities of life 'here and now'. He then makes a series of moral judgments of the actions taken by its heroes. Finally he judges the level of complexity of the chapter and assesses it as "very complicated for understanding". Nevertheless, finally he re-affirms its value:

> I liked the text because it teaches about games, that finally turn into quarrels – it teaches about one of the reasons because of which civil wars occur. The story is very convincing. Because it is realistic. The text is relevant and timely. Nowadays too civil wars occur. Which include controversies. Slander. Verbal abuse. And even physical violence. Between gangs. Groups of Arabs and Israelis. Secular and conservative people. Jews and Christians. Between parties in the Right and in the Left. And more.
> I think Abner should not have offered Joab at all to get the two armies to play a game. Joab certainly should not have accepted. Both should have been aware of the fact that there could have developed a situation which would lead to war.
> I think that Asahel made a mistake when he provoked Abner. He should not have played it a "hero".
> I think Abner was right when he suggested to stop the war. Joab too was wise when he agreed to stop the war.
> I think that all the bloodshed in this war was uncalled for. After all, the two enemy groups were brother-tribes.
> The chapter is very complicated for understanding, but finally we realize that it is very useful (Yotam, sixth grade).

Work with this stop often merges synergistically with the work on the sixth stop, *Deliberating* issues in the texts, as text #8 below shows. This stop offers the learners a cognitive environment in which to problematize their understanding of the issue at hand. They use it to weigh competing meaning options, explanations and interpretations; to tackle paradoxes, contradictions, text absences & silences and to construct problematic value judgments. Text #8 offers an example for the work done in this

stop. In it Guy, a sixth grader, deliberates the complex moral issue of conflicting responsibilities:

> Judging:
>
> Absalom's mutiny starts from Absalom's wish to be king in spite of the sense of guilt over killing Amnon.
> Judging the mutiny is complicated and cumbersome so I will first judge all the dominant figures in the mutiny.
> I will start with Absalom, the creator of the mutiny, in my opinion the beginning of the mutiny could have been on another later date namely, maybe in his heart of hearts David does want Absalom for an heir and if David does not wish so then he can set out on a mutiny.
> King David – David set out on the mutiny after many ploys, such as: Hushai the Archite who offered bad advice to Absalom by means of his weak point – his ego.
> David instructed explicitly not to kill Absalom.
> In my opinion the two stances are correct but still there is only one just stance.
> David is Absalom's father after all (although he had killed Amnon).
> Absalom starts the mutiny with only one thought to kill David so David has to protect himself.
> Joab (David's captain of the guards) Joab disobeyed David, who explicitly said not to kill Absalom Joab killed him with one thought to protect the king. I think Joab was in the right because he murdered just out of respect for David although he did not obey [his] order and that is why he deserves a punishment.
>
> Deliberation:
> In Absalom's mutiny there were many deliberations, and I wrote some of them:
> My first deliberation is, why Absalom did not speak with David about the inheritance of the crown.
>
> Why did David demand not to hurt Absalom although Absalom wants David's death?
> One important question that is certainly related to the deliberation is: what are David's motives in murdering Absalom?
>
> One motive is known but still [I] know [sic, spelling error in Hebrew] "his silence with David is not clean" namely Joab did many things against David's will and now he does one more thing, The point for thought is did Joab think of the punishment that he will get from David? (Guy, sixth grade)

The seventh stop on the Cycle is *Conceptual Transforming*. In this stop the learners transform pieces of linear information in the text into a coherent, hierarchical whole, on the basis of their personal interpretation of the information relevant to their topic of inquiry. From a dialogic point of view, this stop offers an opportunity for the personalization of the source text, as first, the transformation is based on a personal interpretation of the text, and second, the transformation is based on only those parts of the text, which promote the learners' personal learning goal. From a textual-cognitive point of view, this stop promotes a deeper understanding of the source text, as it involves contemplating the logical relations between its components and their relative rhetorical functions. In doing so, it yields a hierarchically-organized version of the source text. This is why in most cases, the transformed meaning is represented schematically, usually by means of a simple semantic map, to be later developed into a full, discursive text. This sophisticated process thus generates a synergistic interaction between creative acts of mind on the one hand, and structural, systematic thinking, on the other. Text #9 & #10 offer examples for the work done in this stop. Text #9 presents the source text:

> How do unpopular children cope with their situation? The smart ones among them find in the class, or in another class, a faithful friend, whom they can trust. Such a friend helps prevent total isolation and compensates for the frustration caused by the attitude of the majority of children. Such children learn to cope with their share of hurt and insults. These children say that deep inside they cry, and on the outside they play it strong. Anyway, relationship with one child, whose love and support they can count on, is compensation. But there are children who cannot make even one friend, and then they are lonely and hurt (London, 1994:32).

Text #10 (Figure 2 below) presents the map which re-conceptualizes it. In this instance, the Anonymous sixth grader transformed the source text by creating a structure of a comparison between two types of children. This re-conceptualization makes an implicit rhetorical structure, underlying the surface text – explicit. Had the text offered an explicit comparison in the first place, it may have been more reader-friendly. In this way, the transforming stop both promotes a deeper understanding of the source text, and offers learners implicit instruction for writing their own texts in the future.

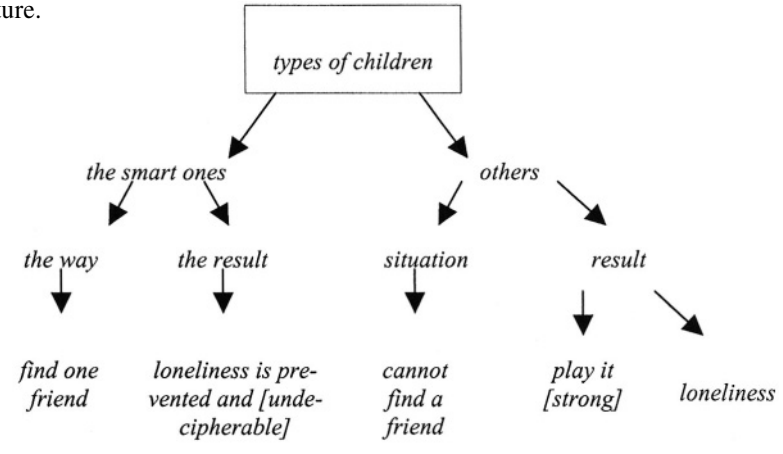

Figure 2. Text #10: The transforming map by an anonymous, sixth grader (presented in handwriting).

The eighth stop on the cycle is *Re-Contextualizing* the newly gained knowledge. In this stop the learners are free to 'take off'; as it were, with the new knowledge, and manipulate it in new contexts, breaking away from original learning context and learning goal – as they please. This is, then, actually the only reflective stop where learners are free of the main constraint underlying all the other stops: the specifically defined learning goal controlling the task. This stop provides an outlet for the children's creative drives, and for teachers who may feel the need to break away from the strict constraints of academic writing. Some writers use this stop to let their thoughts wander and hover, as it were, around the topic of discourse, thus enabling them to combine traditional writing with other channels of self-expression. Some learners use the stop for partially-verbal, and even non-verbal reflection. My data

include a rich variety of verbal re-contextualizations, such as letters written to authors of the texts and to their relatives; casting the author as a figure in a reportage; T.V. mini-dramas dramatizing the issue at hand; advertisements; poems; interviews and dialogues – as well as non-verbal ones, such as drawings, games, symbols & icons; cartoons and comics. Texts #11 & #12 (Figures 3 & 4) demonstrate the learning products created in this stop. Both are re-contextualizations of the poem "For Man is like The Tree of the Field" by the Israeli poet Nathan Zakh (1988). They present two types of re-contextualizations based on this poem, illustrating two different readings of its message.

In the first (Figure 3), Sharon, a sixth grader, crosses both genre and domain boundaries by recasting the poem as a news item, entitled "A News Flash: A Demonstration for the Sake of Trees". In the item Sharon reports a protest against replacing a green forest near Jerusalem with a shopping Mall. In her reportage, she specifies a place and a date for the imaginary event she creates, as well as the conditions under which a group of contractors intend to build the mall. She describes the scene; quotes the caption on the demonstrators' protest signs and enumerates their arguments. She creates drama by citing bits of fierce dialogue; reporting the tearing down of the contractor's sign designating the forest as a destruction site, and emphasizing the protestor's call to kill themselves along with the trees. Her language choices indicate an attempt to mimic the register of a typical news item. The story is followed by a drawing composed of three icons, re-iterating both the content and rhetorical structure the poem.

Figure 3. An illustration of a poem by Sharon, 6th Grade.

Figure 4 presents an example for an illustrating re-contextualization, more non-verbal in nature, where an Anonymous sixth grader concretizes the message of the same poem by comparing the lower part of a human being to a cut-off tree trunk. He or she then further illustrates the notion by another drawing and two captions, based on the poem: "... Like Man the tree also gets cut off..." and "...Like Man, the tree is also thirsty..."

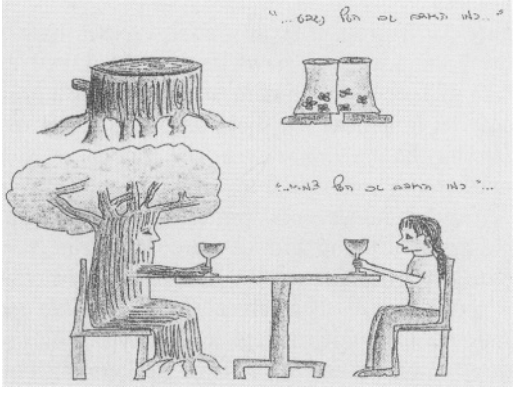

Figure 4. An illustrating re-contextualization by an anonymous 6th grader.

The last stop on the Cycle, *Linking,* involves assessing learning outcomes and creating future learning goals. In this stop the learners reflect on the contribution of the learning source to their learning goal. This affords them a more educated starting point from which to set new, more focused learning goals, and set out on a search for relevant learning resources. This, in turn, enables them first, to further their knowledge on yet unsettled issues related to their topic of inquiry, and second – to start a new learning cycle by developing new learning goals, now based on an enlarged body of relevant prior knowledge.

Text #13 by Etie, a sixth grader, provides an example for this. Etie uses this stop to produce two sets of questions: "My research questions that this text answers" and "The questions that this text arouses in me":

> This text relates to many of my topics of inquiry, such as the way drug users feel, their lack of communicating to reality and the severity of taking the substance...
>
> My research questions that this text answers are:
> a. What are the causes for drug abuse?
> b. Which organizations deal with drug prevention?
> c. How does the drug abuser feel?
> d. What are the reasons for being dragged to abuse drugs?
> The questions that this text arouses in me:

a. Which types of drugs are there?
b. What is the source of the drugs? Who markets them?
c. Which is the population, that usually abuses drugs?
d. What ways are there for drug withdrawal?
e. How is it possible to stop and prevent the dealers from marketing drugs?
f. How is it possible to stop and prevent youth and adults from abusing drugs? (Etie, sixth grade; Presented in handwriting).

Figure 5 below presents a schematic view of *Reflection Cycle* as a whole.

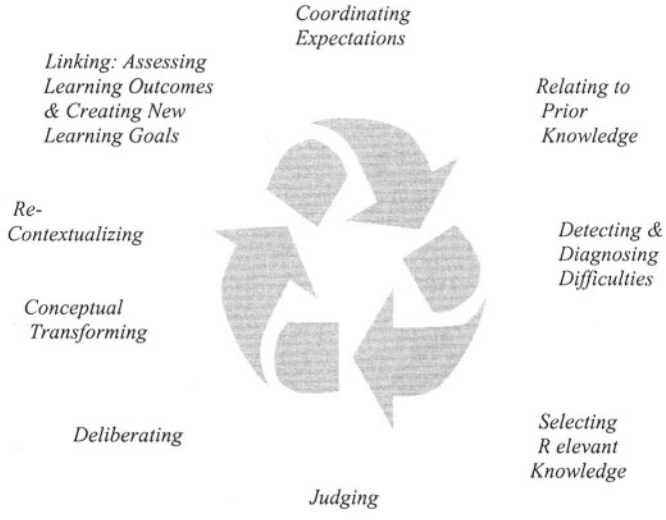

Figure 5. Stops on the reflection cycle: An overview.

3. USES & MISUSES OF THE TECHNIQUE

3.1 Learning Contexts

The *Reflection Cycle* can be used in various learning contexts where reflective thinking is called for. For the most part, it is used in relation to a specific *text* at the heart of the learning event (e.g., in Bible or literature studies) – as in most of the examples above. In this context, reflective writing will be done in dialogic response to a text of any genre used in class (e.g., a textbook chapter; an encyclopedic entry; a web text; a section of a play; a poem; an advertisement; a newspaper article, etc.). For instance, the technique can be applied to a text related to a specifically defined topic, such as 'Coping with Rejection' (as in text #10 above), which the students learn as part of a research project. In another context, the Cycle is used in relation to a certain *topic* – independently of a text, to reflect on extant knowledge related to it. In this learning situation, teachers may use it either as an introduction to a new topic

(such as 'Sea & Coast Pollution' – as in text #2 above); as part of a concluding session, or a review. In the last two cases the reflective text that the learners create relates directly to acquired knowledge itself, (as in text #2 above), rather than to a learning source mediating it.

3.2 Recommended Training Procedure & Technique Management

Each stop on the *Reflection Cycle* represents a learning act, which is characteristic of mature learning behavior. Teachers are well advised to conceive of it as a set of *habits of mind,* to be used spontaneously and judiciously – not merely as a linear string of mechanical performances. Thus, once it is exercised and internalized, it can be discarded.

As will be emphasized in section 3.4 below, the training procedure that the *Reflection Cycle* necessitates is highly vulnerable to over-training and misuse. As an attempt to minimize such potential damage, following is a proposal for a recommended training sequence. Clearly, there is more than one 'correct' way to handle the training stage – depending on the multiple constraints that a specific learning situation may entail (e.g., learners' age & cognitive ability level; teaching and learning styles; various school cultures, etc.). Thus, the following proposal should be treated as a general template, which teachers can adapt and then apply to the specific context in which they wish to work with the Cycle.

Four pedagogical principles underlie the proposed sequence:

1) *A gradual shift of control:* As the training progresses, control of the learning process relocates gradually, moving from the teacher to the students. Throughout the training phase it is the teacher who initiates use of the technique; sets the pace & the learning goals; spots and diagnoses misuses in implementing the Cycle, and helps to put slower learners on the right track in case they fail. However, once the Cycle is mastered, it is meant to replace traditional learning tasks, and is to be used by the students independently.
2) *A shift from implicit to explicit instruction:* In the preparatory phases of the training sequence it is recommended that the learners be exposed to various acts on the Cycle implicitly. Thus, explicit metacognitive, metalinguistic & procedural information involved in intelligent use of the cycle will be offered to the learners only at a later stage.
3) *Structured & unstructured use of the stops on the Cycle:* Following the training phase, all the stops on the cycle are to be used recursively, in unpredictable combinations & interactions. This means that there is no telling which of the stops would be selected for use; use of which stop would necessarily entail the use of others, and what the order of the stops selected for use would be. However, it is reasonable to recommend that on the first encounter with a new text to be reflected on, work with the first four stops *(Coordinating expectations; Relating to prior knowledge; Detecting & diagnosing difficulties* and *Selecting relevant knowledge)* precede the work with all others.
4) *Varied learning/teaching formats:* The proposed training process can be applied in various classroom formats – depending on teaching traditions within the

school, teaching and learning styles, and learners' age and ability level. In an ideal situation, intensive group and individual work should follow a short plenary introduction and demonstration of a new stop. Having introduced it, either in the implicit or explicit phase, the teacher can now use smaller-format class configurations to support slow-learners. She or he can supply additional explanation and demonstration of the stops; detect miscomprehension and/or misuse in implementing the stop under study; offer supplementary instruction, etc. To wrap up a session, the class can return to the plenary format, as the whole class shares a selection of students' written products publicly.

Bearing these principles in mind, following is a description of a five-phase training sequence for the *The Reflection Cycle* technique. Phase One involves *inexplicit introduction of the stops.* In this 'practice without preaching' phase, naturally occurring learning contexts can be used as opportunities to practise various stops on the cycle without naming them or explaining what they are all about. For instance, to introduce use of the *Coordinating expectations* stop, each time a new text is approached, the teacher can ask the learners to think/write about the purpose for which they are reading it. Similarly, to introduce the *Relating to prior knowledge* stop, the teacher can make a point to start each new learning unit (e.g., topic, chapter in a book, etc.) by having students write-to-reflect about their prior pieces of knowledge on the topic, and then have them share their products with the whole class. Other stops may be approached indirectly in similar manner.

In parallel, teachers should start creating with the learners *new value systems* in preparation for stops that may generate a cultural clash with competing learning behaviors. For instance, in preparation for the *Detecting & diagnosing difficulties* stop teachers must make a special effort to show their students that they respect their ability to detect, describe, specify and eventually even diagnose their difficulties in comprehending concepts, texts or explanations discussed in and out of class. They must convince their students that contrary to what they may have experienced in other learning environments, in their classes detection of difficulty is respected, praised and rewarded – instead of penalized.

Phase Two of the training initiates *explicit presentation of each stop on the Cycle.* Once the indirect preparation stage is completed, and the students have experienced the stops on the Cycle indirectly and inexplicitly, teachers can launch the explicit and systematic training phase. This should be done as gradually as possible, introducing each stop separately – on different lessons, preferably even on different school days. A recommended way of going about this is to select an intriguing but concise text, and use it repeatedly each time a new stop is added on to the learners repertoire. This can help show the learners how each new stop enriches their thinking about a text they already know.

Phase Three allows temporary *work with the Cycle as a whole.* Once all the stops on the cycle have been explicitly introduced and practiced piecemeal, the students are ready to experience the impact of the full cycle as a whole. To complete this stage, teachers can now select one, or maximum two additional short texts, and have the learners write about each reflectively, using all the stops on the Cycle. At this point it is crucial to avoid over-practice, and restrict the full Cycle practice to a maximum of three texts – preferably dealt on different school days.

Phase Four of the training involves *independent and selective use of the Cycle.* It is now time to introduce the ultimate mode of using of the cycle: spontaneous and judicious selection and implementation of the stops. The students are now expected to use it not only on their teacher's demand – but also on their own initiative. In this unstructured learning environment the children use the 'stops' on the Cycle as optional writing opportunities. They are encouraged to use them cyclically: prior to, during and following the reading of the text to be learnt from, or a topic to process. The students can now be entrusted with the selection of one or multiple stops, from which to write/think about a text or a topic – be it each stop separately, or a few stops interactively. The latter case is demonstrated in text #3 (Table 1 above), which exhibits a series of spontaneous interactions of different stops in various combinations.

The teacher has now turned from initiator to advisor: he or she can now supervise what the students are doing; offer them help, advice, evaluation or extra training – as the case may be. Having completed this phase, the learners are ready to optimize their use of the Cycle and incorporate it into their learning routines in an independent and spontaneous manner.

Phase Five introduces the last stage of the training: *metacognitive & procedural specialization.* By now the learners are ready to be taught how to use the stops on the cycle more knowledgeably, exercising increasing degrees of metacognitive control of the technique. The teachers can now plan special sessions, where they can teach particular theoretical knowledge pertaining to various stops on the Cycle. They can now share with their students metalinguistic terms with which to diagnose comprehension difficulties; procedural knowledge which would help them with semantic mapping; metacognitive strategies with which to monitor the relevance and truth-value of prior knowledge, etc. To introduce these notions and procedures for the first time, teachers can use the plenary format. They can then farther develop and elaborate on them in small format exchanges; for instance, they can expand a small group, or an individual feedback session to teach some more advanced metacognitive information. Once teacher and students have established a mutual metalinguistic vocabulary, he or she can use other interactions with the class, both planned and occasional, to further elaborate on any theoretical point called for.

3.3 Benefits for Teachers and Learners

Teachers who use the technique regularly report they find it attractive for several reasons. First, once the training stage is over, the children have full autonomy over the use of the technique in learning from new texts, so the teachers are free of the responsibility for preparing and administering new learning assignments for each learning event. Secondly, they report that children of varying abilities find the Cycle a friendly learning environment – from slow learners with special needs, who are integrated into regular classes, to high-achievers. Third, some teachers admit they find comfort in the structure which the technique brings to what they may perceive as the chaotic freedom of reflective thinking. They can thus use the technique as a

learning environment which offers structure within this chaos, without having to give up on a flexible, personalized and open-ended knowledge construction process.

As for the learners, feedback from children and teachers, product analysis, learners' and teachers' documentary logs and classroom observations give rise to several impressions. To begin with, when the Cycle is introduced gradually and exercised flexibly & judiciously, it appears that most children enjoy writing with it and take pride in the texts they create and the knowledge they gain. Secondly, they seem to go through significant learning experiences. In an entry in a documentary log written by a special education fourth grader, he reflected on his learning experience with the *Prior Knowledge* stop, which he used in relation to the topic of 'Peer Pressure'. He commented there with a heightened sense of social and personal awareness, as well as with some wonder and regret, that on that day he and his peers "...found out that unfortunately we knew a lot about the topic." In classrooms where the technique is used as a standard learning procedure, the learners seem to prefer working with it to traditional writing tasks because they experience its learning impact. In a movie documenting work with semantic mapping involved in the *Conceptual transforming* stop (Sarig, 1994), a six grader offered a learned comparison of the technique with traditional learning tasks, such as open-ended questions. He concluded that it is on all counts preferable, as it led to what he characterized s deep, leaning experiences. Finally, the learners seem to pick up writing-to-learn as a natural learning habit, sometimes even initiating it, and suggesting to the teacher to use it when they perceive it is necessary.

3.4 Misuses and Pitfalls

Useful as the Reflection Cycle may be for teachers and students alike, the benefits described above appear to be highly constrained, as the technique is prone to misuse and misapplication. Feedback from learners and teachers, product analysis and classroom observations indicate two major problems. First, for most children, and for that matter, for some teachers, the use of writing as a tool for thinking (and in formal school contexts, for reflective thinking as well) is highly non-habitual. The technique therefore necessitates intensive training. This might, in turn, lead to overuse, or compulsive, rather than free & spontaneous use of the technique. In some cases, over-zealous or anxious teachers tend to 'cram' presentation of the whole Cycle at one time, rather than use occasional opportunities for introducing and exercising it piecemeal – a single relevant 'stop' in a pertinent context, as proposed in section 3.2 above. In extreme cases, teachers might go so far as using the Cycle as the only teaching/learning strategy, and use it repeatedly, without allowing to use it openly and selectively.

Another danger lies in attempts to translate the Cycle, so to speak, into a more familiar, 'normal' task. Teachers and students alike have been observed transforming the Cycle into a list of questions to be answered. There is nothing wrong with operationalizing the stops by using the familiar question form. However, once the children are up against a list of consecutive questions, they may treat the task as such, and produce an efficient list of discrete and consecutive answers. This might

lead to flat, non-reflective and contrived products, thus stifling its spirit, missing its point and yielding counter-productive results (Sarig, 2000).

4. CONCLUSION

The technique presented in this chapter offers young learners a structured space in which to acquire reflective habits of mind by means of writing-to-think. When applied openly and judiciously, especially in the acquiring stage, it is rich and flexible enough to suit a variety of disciplinary, inter and multi-disciplinary school topics, and provide individual learners with a space for personalizing new knowledge in a mindful way.

The Cycle offers a practical application for the six theoretical perspectives, which inspired it. It emulates mature semiosis by offering multiple readings of a single text or idea through multiple writing acts and by emphasizing critical deliberation. In so doing, the Cycle creates an empowering learning environment, which encourages and puts to practice abstract dialogic ethics, thus elevating the epistemic status of the learners and enabling them 'to write' the texts of Others – much in the spirit of Bakhtinian philosophy and Freirean pedagogy. The cycle calls for the personalization of incoming knowledge; it capitalizes on learners' extant knowledge and presents them with the opportunity to create new, transformed objects of knowledge. It calls for cognitively demanding understanding performances in an authentic task environment, and thus it may be claimed to practise the basic elements of constructivist approaches to teaching and learning. Finally, the cycle uses writing as an instrument for thinking, thus using the potential of writing to initiate, generate, shape and transform knowledge. In directing the learners to tackle a learning source from reflective and creative perspectives – which for some of them would not come naturally – it cultivates their reflective disposition.

However, as extensive experience with the technique shows, like any teaching heuristic, it, too, can be put to abuse, especially during the training stage. Training learners to use the technique may turn out to be tedious and counter-productive, if it is repeatedly offered to them as a whole. In addition, even at later stages, when it is used mechanically, rather than openly and flexibly, it may lead to stilted, inauthentic writing products.

By now the technique has been used widely enough to merit systematic research. This should focus first on the conditions, under which learners benefit from it: which disciplines, domains, topics and text-types are more suited than others, for optimizing use of the technique? In what ways can its use interact with individual learning styles? A related line of research should focus on the type of gains it may yield, given the right conditions: how can the knowledge gains be characterized and assessed[2]? How does use of the technique interact with the culture of learning in classes where it is used regularly? Another interesting line of research concerns the developmental aspect of using the technique: how long does it take for learners of

[2] *Rubrics for assessing reflective writing are offered in Sarig (1996).*

different age groups and cognitive level to master each stop on the cycle? How do they differ in terms of the type of coaching they need until they use the technique spontaneously? The products of such studies may hopefully contribute to further fine-tune this promising, but misuse-prone technique.

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