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ABSTRACT

A collaborative research project between the Educational Research Department of the University of Liege (Belgium) and a pedagogical high school (primary pre-service teachers) was aimed at the literacy development of the future teachers before they are able to teach reading and writing in first, second, and third grade classrooms. In Belgium future teachers follow a 3-year post-secondary course to teach and do not need a university degree. The study attempted to demonstrate a methodology to systematically improve teacher literacy. Pre-service teachers undertook to use a portfolio method for writing activities--autobiography, knowledge and proficiency self assessment, critical and creative handling of knowledge, and self guidance--to stimulate the reflexive approach. Findings suggest that the pre-service teachers' portfolio writing helps researchers to wonder about tracks such as: evidence which shows through writing a real exploration, reflection, appropriation, and occupational self-guidance approach; and evidence which shows the influence of training devices (interactions structured between peers and the portfolio tool) on conceptualism. (Contains 1 note and 12 references.) (NKA)

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How Pre-Service Teachers Develop Their Own Literacy Through Personal Portfolios and Peer Interactions.

by Sabine Vanhulle

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HOW PRE-SERVICE TEACHERS DEVELOP THEIR OWN LITERACY THROUGH PERSONAL PORTFOLIOS AND PEER INTERACTIONS
Paper presented at Edinburgh, 2002, the 29th of July, 19th International congress on Reading, Symposium "Schools where Literacy thrives".

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This paper concerns a collaborative research between the Educational Research Department from the University, and a pedagogical high school (Primary pre-service teachers). This research is aimed to the literacy development of the future teachers before they are able to teach reading and writing in the first, second and third grade-levels classrooms (6 to 12 years old pupils).

The specificity of the Belgian educational programme for primary school teachers requires a brief explanation. Contrary to programmes in other countries where becoming a teacher requires a university degree, our future teachers follow 3-year post secondary course, which includes both theoretical courses as well as practical classroom experience. Our research and initiative attempt to ameliorate their own literacy (and thus their capacity to transmit knowledge) in this context. To date, literacy teaching is often limited to formal, grammar-based lessons, with little or no psychological basis. This can explain the difficulties Belgian youth have in reading, as revealed by I.E.A. (International Association for the evaluation of educational achievement) tests, among others. Within the scope of primary teacher training, which is extremely limited in time, we attempt to demonstrate a methodology to systematically improve teacher literacy.

I. What is the issue ?

The issue can be defined on the basis of the three following proposals :

1. Belgian pupils of the French Community have some difficulties in reading / production of writings, both in primary and secondary school (14 and 15-year olds) (cf. Pisa-Ocde, 2001). What kind of difficulties ? For instance : inferring, activating relevant previous knowledge, anticipating, keeping some pieces of information in mind, asking some questions, or writing down a text about precisely defined projects... Those processes involve different types of analysis, selection, decision and relevant strategies. The cognitive cost of those operations is so high that pupils have to feel motivated to engage themselves into the reading/writing activity.
2. Future teachers themselves have some to difficulties to becoming expert readers, to engage in reading or writing tasks. A lot of our students don't like reading. They have a real lack of literacy culture.

Prior to their cognitive features, literacy processes are deeply influenced by the type of relations the student has with the written language, according to his/her heritage, his/her social and cultural habits. This aspect enlarges our starting issue as well as its implications related to teachers' training :

3. Students' commitment into reading/writing activities depends on their social and individual link with writing. Thus, the mediation made by the teacher about the students' relation with the written language does not only concern cognitive aspects, but also feelings, motivations and representations.

II. Our theoretical and practical options

These are our research proposals, on which we have conceived a longitudinal teachers literacy development program :

- any classroom can be perceived as a Learning Community where the learners collaborate actively to build knowledge (Brown & Campione, 1995). In this community, the future teachers can build common practices and share their issues after experiences in the classrooms where they have to do their practical apprenticeships.
- Doing so, we try to form "reflexive teachers " developing a critical thinking and positioning themselves in the education area as practitioners able to make decisions, to think a curriculum, to assess themselves and their educational actions and results.
- The reflexive practitioner has an authentic attitude which consists to knowing himself as reader and writer (which are his models, his history, his representations and attitudes in face to texts, language, and literacy development ?). He can practice a methodical thinking about his own attitudes. He can find a thinking frame developing his own autobiography to a new and larger range of ideas.
- But an authentic, autobiographical approach is not sufficient to become an effective literacy teacher; this also needs a lot of scientific knowledge. This scientific knowledge will be really efficient if the student learn to integrate it in his own thinking frame. That is possible only if he become able to practice a really creative and critical knowledge manipulation (Sarig, 1996).
- Self assessment, autobiography, and creative-critical thinking can be developed writing reflexive texts. Those texts can be prepared and evaluated through peer interactions, and through reading and discussing texts from the scientific literature.
- The students reflexive texts are like the traces of their state of development at different moments (i.a., Wagner, Brock & Agnew, 1994). It is very helpful to conserve the most significant traces into portfolios, during the three study years they are in the High School. Finally they can assess their own development and knowledge transforming process. So, most of the texts written by each student are not wanted as academic products but as some "reflexive drafts", transitional texts, transient discourses born in specific moments and spaces.

III. Producing reflexive writings

The writing activities we suggest stimulate four aspects needed for the reflexive approach :

- **Autobiography** in the domain of literacy (who am I today, as a reader and texts author? What is my experiment about that aspect of my identity? What are the available patterns? What has furthered or constrained my relationship with writing and the way I use it ? How important is writing in my life?, etc.);
- **Knowledge and proficiency self-assessment** (at which level of such or such field of the written language am I – such type of text, such competence in reading or writing; which objectives am I aiming at ?);
- **Critical and creative handling of knowledge** (writing about theoretical subjects, simplifying, organising one's ideas, organising one's thinking through writing);

- **Self-guidance** for occupational decisions (making the point about facts, situations experimented in class-rooms, taking note of the decisions which have been adopted or which need to be adopted, evaluating their impact, etc.).

We request the students to gather the most significant of the produced texts in the individual portfolio, which is used as a basis for co-evaluations and monitoring dialogues, together with the training-research team and with peers (inter-evaluations). This portfolio is therefore located at the cross-point of collective approaches (common referential knowledge are created) and individual approaches (each one takes over that knowledge and puts it in a variety of forms, according to one's personal dispositions) and is used as a support for an on-going assessment process within learning. The portfolio thus supports an "accompanied self-training process" during the 3-year period. It takes its anchor in an autobiography-type approach and then evolve into an occupational self-guidance dynamics.

Details

3.1. Autobiography

The first key objective of that plan of action is that each one could be able to develop a deeper understanding of oneself as a written language user. That understanding of one's own literacy, of one's own story as a reader and an author, is supported through tracks and evidences of that story : first memories of reading and writing learning; reading notes, former texts written according to a variety of needs; first appreciated books, first written texts; well or bad-noted compositions. The autobiographic stories that are written down from those evidences or testimonies help the student to become aware of his/her concepts and of his / her personal representations about written language, of his / her affinities and repulsions, of the attributions he / she operates, depending on the fact his / her personal and scholar relationship with the written language is either positive or negative (Dabène, 1989, Barré de Miniac, 1992, 1993).

3.2. Self-assessment

The autobiographic approach helps to start a self-assessment work about each one of one's proficiency, to set oneself particular expertise targets (working on such type of text, increasing one's vocabulary, reading various types of texts, dealing with one's spelling difficulties, etc.); this process strengthens along both with the interactive reading and research activities, which help to prepare synthesis, to take notes, etc., and with writing workshops where narratives, poetic or scientific texts are produced. Self-assessment is also stimulated by a regular administration of "writer self-perception scale" (adapted from Bottomley, Henk and Melnick, 1997), which enables to localise oneself on the following scales :

- the progress feeling, support of the internal motivation (item examples: "When I am writing, I really organise myself better than I did before", "The sequence of my sentences builds more meaning than before", "Now, I select my words more carefully than I did before", etc.)
- the social comparison that helps to locate not only weak and strong points, but also to draw one's inspiration from others' strong points or to better know how we can help other people, etc. (by example: "I write down better than other people do in my classroom"; "My written expression is better than my peers"; "My sentences and sections are as coherent as the other students"; "The vocabulary I use when I am writing is better than the other young people's", etc.)
- The social feedback, stumbling block of the self-perception (by example: "In my family, they think I write well"; "I can say my teachers like the way I write"; "My school friends could say I write quite well", etc.)

- The “emotional states of mind”, which indicate stress, good or bad feeling in the writing activities (by example: “I like the internal feeling writing gives me”; “When I am writing, I feel calm”; etc.).

3.3. The creative handling of knowledge

Another important objective of that structure is to stimulate a really “creative handling of knowledge” (Sarig, 1992), through writing. This leads us to propose to students some various tasks about written conceptualisation (about literacy, about the portfolio as a tool that can be used in primary school, about initial learning of reading/writing, etc.), from their training and didactic experiences within the frame of the research. A typically requested process is first to make the point through writing about one’s previous ideas, then to devote oneself to research works and cooperative exchanges about the dealt themes, and finally to come back to personal writings and to wonder *in fine* about the changes of one’s own previous ideas. In that way, the requested writings often operate as transitional texts, as the evidences of the progressive building of a thinking or a knowledge. Thus, by example, some writings about the literacy concept were requested several times and according to different ways: students have built on the theme, both alone and together with peers, continuous texts as well as commented conceptual maps.

Those texts are assessed (at first, in a formative way with regulation tracks, then in a certificative way), according to “veritability”, relevance, complexity, creativity and communicability criteria.

3.4. The occupational self-guidance

A last target assigned to the portfolio is that it evolves progressively and more and more often on decisions, on an occupational self-guidance process: confident of his/her knowledge about himself/herself in terms of believes, experiences, proficiencies to be increased, etc., also confident of a personal appropriation of theories, knowledge, the young teacher is requested to think about his/her own practices, about the impact of his/her actions during some sessions, and to construct and motivate his/her own action ways. This process step is currently being reinforced in the third training year. Each student is invited to note each day significant facts (child’s difficulties in writing or reading, management issues in a mother-tongue activity, etc.), to produce explaining hypotheses and to note his/her decisions on precise points (about his/her attitudes and reactions when confronted with such or such problem, the supports provided to such or such child, the activities being fitted during the process, etc.).

Finally, at the end of each year, a co-evaluation takes place: what is the particular process of the student, which step has he/she reached, particularly in the field of reflection and change of his/her knowledge and representations? In that field, how does he/she use the language? What are the correctness, relevance, complexity, readability levels which appear in his/her conceptual texts? A score, quite representative of the student’s level of investment in the self-construction process is negotiated and personalised targets are commonly set up for the following year.

IV. Discourses analysis

That research work helps to wonder about tracks such as:

- evidences which show through writing a real exploration, reflection, appropriation and occupational self-guidance approach;
- evidences which show the influence of training devices (interactions structured between peers and the portfolio tool) on conceptualisation.

When consulting portfolios, we can observe that there are as many reflexivity forms as there are individuals in the training community which has been developing during the three-year period. Of course, that community succeeded to develop common discourses. All the students

have changed reading-learning/teaching representations : thus, from formalist conceptions which often combined written language competencies with spelling and syntax knowledge, or from some conceptions featured by the “gift” dividing the world into the ‘literary’ and the ‘non-literary’ people, we went to currently more complex and detailed conceptions. For example, the awareness of the teacher’s key part in the students’ access to literacy, of the influence of the activities he proposes and of the way he manages and organises them, is currently well shared by students. This change of priority is linked to the fact that students were continuously confronted with complex texts and with metacognitive activities about what the tasks really implied for themselves when they were in learning situation.

Nevertheless, roads to appropriation vary from one student to another¹. New reference knowledge are internalised and developed by each student who integrates them in his/her own previous conceptual field – it can thus be said that each one goes from his/her own spontaneous conceptions to more scientific constructs. It is where the reflexive process intervenes, between initial representations change (which implies epistemological crises periods) and new knowledge integration, related to the mental construct peculiar to each individual. It is a long, slow process, with regular periods of stagnation or regression, and sudden forward leaps. We would venture that process goes better and faster when the student gains by a relevant support from the trainer who literally comes into his/her nearby development area through oral and written dialogues, thanks to stimulations, questions, requests for deepening that are closely linked to what the student himself/herself is developing.

According to the texts the students wrote day after day, I can say that the level of appropriation increase simultaneously with the skill to propose subjective statements. Appropriation is a process of “subjectivation”, it’s to say, a way to integrating objective knowledge in a subjective process of knowing.

This process can be seen through a lot of traces in the language itself, of course. So, the reflexive texts reveal how the appropriation process is progressively increasing. That is the last edge of this research : an in-depth analysis of discourses and study of linguistic traces of the subjective process of knowing, or of getting-in-know.

One can see that this process depends on different reflexive and discursive stances the writer is able to take up.

I’ll explain that with two cases.

¹ A 3 main categories listing was used to analyse the texts contained in the students portfolios. The categories concern : 1/ The Proposals or “Topics” made by the student; 2/ Different sorts of Reflective operations (Sarig, 1996) and 3/ The linguistic ways of enunciation (Bronckart, 1995, 1996).

Actually, the analysis was organised in two phases : the first phase consisted in gathering the students (or their ways of appropriation) in different specific groups (as in a “clustering” analysis). According with the different students’ attitudes about reading and writing, skills, degree of involvement and progress during the training, I could divide them in 5 “clusters”. The second phase consisted in selecting one representative student for each “cluster” and then, to analyse his/her texts with the 3 main categories listing. Five “Appropriation ways” were brought to the fore : 1/ Heuristic, 2/ Prescriptive, 3/ Pragmatic, 4/ Critical, 5/ Resistant (Vanhulle, 2002).

In the first case, the student – let us give him the name “John” - takes up a subjective stance as a *person* with his own history. He has considered himself as a poor reader and writer for a few years. He has thought that this literacy’s weakness is due to a lack of good training when he was at school. Thus, John is interested in a better manner to teach literacy. He wants that the pupils don’t live what he lived, he says.

This is clearly his own way to reflect about his teacher’s project. In his discourse, one can see a lot of traces of a personal reflection (“I think”, “my advice is that”, and so forth). But, in an other hand, John founds the appropriation on too much self-reference. He needs to enlarge his point of view.

In the second case, “Janet” takes a very distanced stance up, a stance without self implication. This lack of involvement is obvious in her texts. She uses only a neutral language; she repeats our own discourses – with a great correctness, with relevance and sake of accuracy, but it is not yet her self discourse. Thus Janet needs to adopt a more implicated discourse. She has to allow herself to manipulating knowledge and using new possibilities of language.

Thus, the ways of appropriation vary very much. I’ve noted in my analysis that those ways have strongly to see with affective phenomenon. Emotional states in writing, self confident, representations about school and learning, have a strong influence on the level of appropriation and furthermore on the use of written language in a subjective way.

If I had to define the characteristics of a real appropriation, I’d say that it need :

- 1) a real involvement in a transforming- knowledge process, which implies some mental operations about theoretical statements : judgement, synthesis, analysis, scepticism, and so forth. This process needs an effort of what I’ve called “subjectivation”.
- 2) Some competencies to take up different stances : “me as a person, with my history, values, prior knowledge, representations, etc.”; “me as a student learning a lot of new knowledge”; “me as a future teacher”. Those three stances imply a range of possible relation with time : yesterday, today, tomorrow : who I was, who I am now, who I am becoming regarding such or such knowledge, comparing it with my ancient knowledge,
- 3) To feel oneself allowed to say “I” and to take a place as a social actor who’s able to propose social, cultural and educational meanings.

Trainers can help all the students in those ways.

BARRÉ-DE MINIAC, C. (2000), *Le rapport à l’écriture. Aspects théoriques et didactiques*. Paris : Presses universitaires du Septentrion. Coll. Didactiques, Savoirs mieux.

BOTTOMLEY, D., HENK, W., MELNICK, S. (1998), Assessing children’s views about themselves as writers using the Writer Self perception Scale, *The Reading Teacher, Dec/jan Vol. 51, 4*, Newark : Delaware, pp. 286-296.

BRONCKART, J.-P. (1995), Theories of action, speech, natural language, and discourse, in J.V. Wertsch, P. Del Rio, A. Alvarez Eds, *Sociocultural Studies of Mind*. Cambridge : University Press. Pp. 75-91.

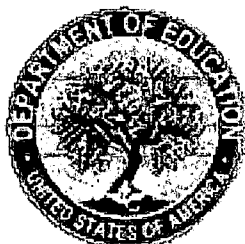
BRONCKART, J.-P. (1996), *Activité langagière, textes et discours. Pour un interactionisme socio-discursif*, Neuchâtel : Delachaux et Niestlé.

BROWN, A. et CAMPIONE J. (1995), Concevoir une communauté de jeunes élèves. Leçons théoriques et pratiques, *Revue française de Pédagogie*, n° 111, avril-mai-juin. Pp. 11-33.

DABÈNE, M. (1987), *L’adulte et l’écriture. Contribution à une didactique de l’écrit en langue maternelle*. Bruxelles : De Boeck.

- SARIG,G.(1996), Academic Literacy as Ways of Getting-to-Know : what can be Assessed ?, in BIRENBAUM, M., DOCHY, F., *Alternatives in Assessement of Achievements, Learning Processes and Prior Knowledge*. Boston/Dordrecht/London : Kluwer Academic Publishers.
- VANHULLE, S. (2002), La manipulation créative des connaissances par l'écriture, entre implication et distance, in *Spirale n°29, Lire-écrire dans le supérieur*. Pp. 123-143.
- VANHULLE, S. (2002), Comprendre des parcours d'écriture réflexive : enjeux de formation et de recherche , in J.C. Chabanne et D. Bucheton (Eds). *L'écrit et l'oral réflexifs*, Presses Universitaires de France.
- VANHULLE, S. (2002), *Des savoirs en jeu au savoir en « je »*. *Médiations sociales et processus de subjectivation en formation initiale d'enseignants*. Thèse de doctorat inédite. Liège : Université, Service de pédagogie expérimentale
- VYGOTSKI, L.S. (1929-1934/1997), *Pensée et langage*. Traduction française de F. Sève, 3^{ème} traduction revue. Suivi de Commentaire sur les remarques critiques de Vygotski par J. Piaget. Paris : La dispute.
- WAGNER,C.L., BROCK, D.R., AGNEW, A.T. (1994), Developing literacy portfolios in teacher education courses, *Journal of Reading*, May.

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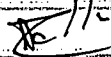
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