

About the utilisation of children's conceptions to create an interactive book

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Summary

Using learners' conceptions to create an interactive book for children between 5 and 9 years old, about the human's procreation and baby's life inside the mother's womb. A double entry proposes an emotional and a scientifically approach. This special "wedding" offers to the child different ways to come into this complex knowledge. A special vulgarisation's way proposes some different level of knowledge on the model of the CD-ROM.

Key-words

Conception, allosteric learning model, interactive book, creation

Introduction

Sexual education at school becomes more and more popular, especially as prevention against AIDS' problems. This education is generally given to young teenagers and presented by external persons who arrive in the classroom with a specific material. We are not against these practices. It is necessary and it's a very good way to open the pupil's mind to the sexual word and its indispensable methods for protection and contraception.

But sexual curiosity doesn't wake up with the puberty. The child, and especially the young child, asks himself a lot of fundamental questions about his existence. Still this subject remains often taboo. Parents and even teachers don't know how to handle with it. However, the children's book market abounds in publications on this subject. Unfortunately the most of them "explain" things but moreover often they don't dare to go right to the end of the children's curiosity. For example, the sexual act is generally not shown. Knowing that father's sex is not the same as mother's doesn't say a lot about "how does it works", not only on the physiological point of view, but also emotional, and sentimental.

Indeed, children's questions are not limited to the "scientific" aspect only, even if they often begin with "how". They often are a real research of identity. While talking about physiological phenomenons, we have to keep in view that the acquirement of knew knowledge could be stopped if the child is not able to cope with his affective feelings. To answer to these problems, we create a book for children between 5 and 9 years old. It relates human procreation and baby's life inside the mother's womb without avoiding the emotional part of it. The most usual questions about procreation asked by children are presented all along a fairy tale.

Book's presentation

This book is conceived on the model of the interactive CD-ROM. The double entry is proposed through the way of the utilisation of the face or the verso of the book, without one being indispensable to the other. One of the entries proposes a fairy tale like *Hänsel et Gretel* of Grimm's brothers. Two heroes, a little boy and a girl are confronted to the next birth of a baby. The jealousy pushes them to leave their family. They will have to face a lot of proofs before coming back home. All along this fairy tale, the most usual questions about procreation coming from children are presented in sight. Each question has a different coloured point. This one is sending the reader to the other side of the book, where scientifically approach of the physiological phenomenas is proposed. The colour of the point shows the reader in which chapter he can find the information about this specific question. And so on the child can always choose between the imaginary part and the scientific informations. This last one offers the reader different level corresponding to his own level of knowledge, his own questions and his own interest for the subject.

Creation of the book

The importance to use learner's conceptions to create didactic tools has not to be proved anymore. A lot of researches about this practice show the interest of this method. Yet, everytime we must define exactly which are these conceptions and choose an appropriate method to go beyond them. First of all, we have to define what "create" a baby means for young children and how they imagine the baby's life inside the mother's womb. In the same time, we put in relation what Bettelheim and the fairy tale's psychoanalysis say about the emotional part of this very important life's moment with the observations

issued from the professional practice.

Using conception for creating the "Question's book"

In the special fairy tale's part, the reader is confronted to a lot of questions for which he never gets direct answers, because he has to go and find them himself in the scientifically information's part. This part is especially used to show some conceptions we can often observe among young children¹. First of all, the story brings up a conception that almost all the 5 years old children recognise as an error.

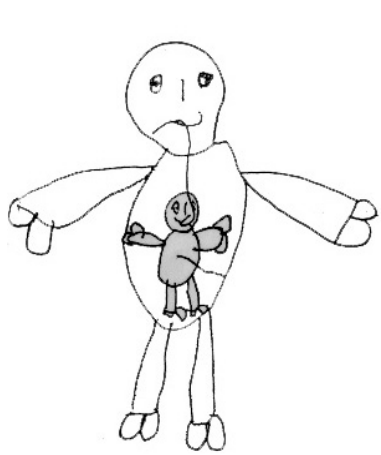


Jo: Mais non, idiot. Elle va bientôt avoir des bébés, alors elle a un gros ventre!
Dom: Pourquoi? Les bébés sont dans son ventre? Mais, comment sont-ils entrés?

Dog's babies are putting inside the mother's womb by the doctor

The function of this picture is to give the child self-confidence especially in his own knowledge. He can laugh heartily, like the heroine of the story, because he knows that what he is looking at is not true. But the function of this picture is also to warn the child that this kind of picture (they are always inside a bubble) is not the reality. So, when the story proposes him a similar situation, with the hero who is imagining answers, the reader knows that this is not correct, even if it corresponds to what he was imagining himself.

¹ The pictures of this part are taken as a pattern from *Cedric* to Laudec, Dupuis édition



5 ans



5 ans



8 ans



Dom: Dis, papa, est-ce que le bébé mange tout ce que mange maman?
 Papa: Pas tout à fait, mais je n'ai pas le temps de t'expliquer cela maintenant. Je dois finir de reprendre la chambre de ta petite sœur.



Jo: Dis, maman, mon petit frère boit déjà le lait que tu as dans tes seins?
 Maman: Non, Jo, mais je t'expliquerai cela une autre fois. Maintenant je me repose. Les mamans sont souvent fatiguées quand elles attendent un enfant.



The aim of this kind of visual presentation is to destabilise the child. For most children, this explanation is the same they could give themselves. But, without any help from the adult, the whole context raises doubt about this explicative model. Even if they dare not admit their ignorance, this confrontation with their own conception pushes them to find explanation in the other part of the book. At this time, it's very important that the adult doesn't answer himself to the child. On the contrary, he must invite him to find himself the information he needs.

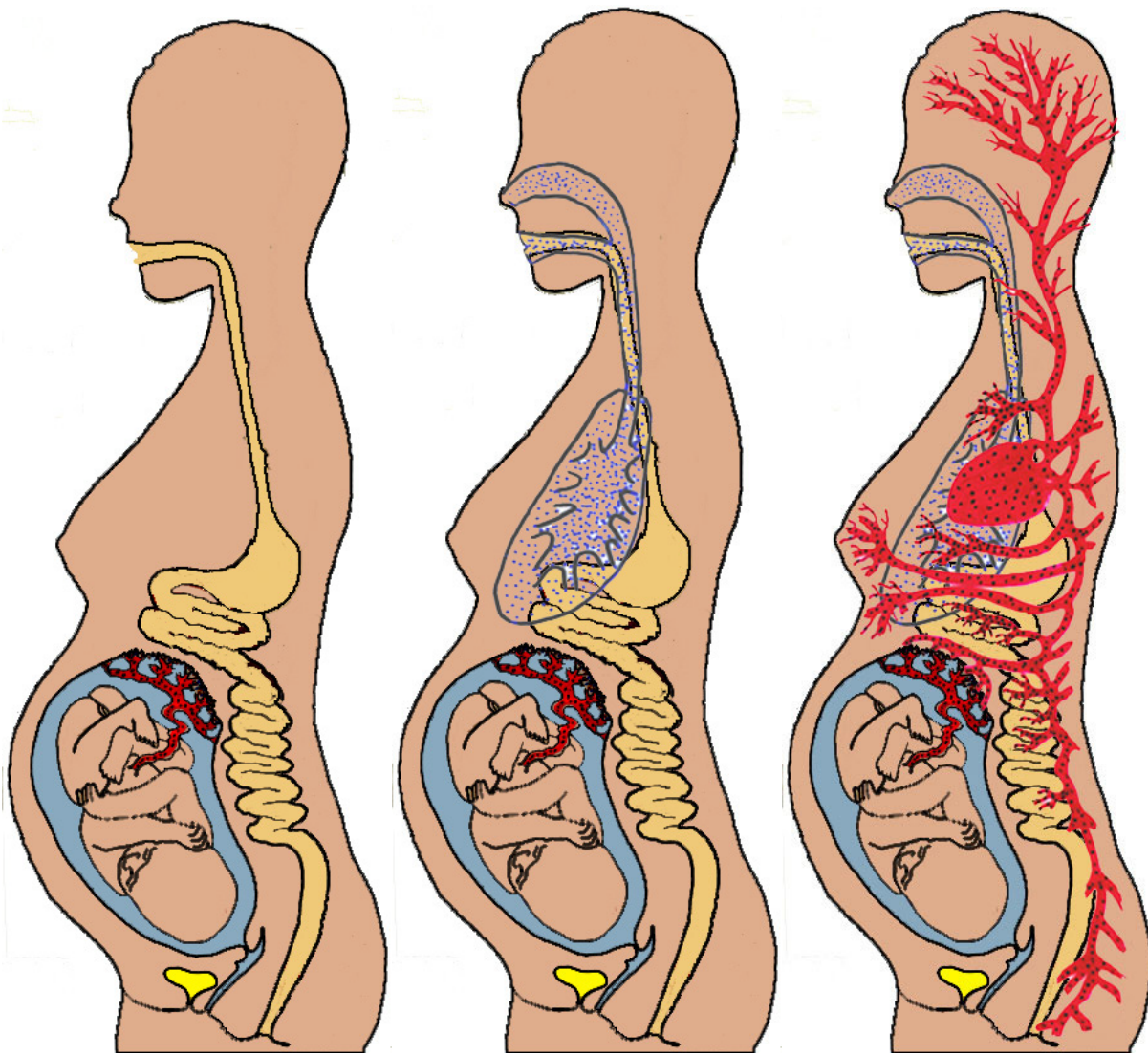
Conception's utilisation for creating the Info-book

The information's part of the book never answers directly the questions of the fairy tale. The answer is principally included inside the pictures, since this book is especially made for children who don't read yet. To create these pictures, it's important to define the principal obstacles to the physiological phenomena's comprehension. These ones were expressed inside some interviews and drawings made by children. Several unchanging conceptions can be noticed. First, the sexual act is generally misunderstood, or unknown.

More, even if the children received an information about this subject, this last one is usual very short and often misinterpreted. For example, the children who are using the vocable "making love" put behind these words actions like kissing on the mouth or just sleeping in the same bed.

For the older, 8 or 9 years old, some very rude words like "fucking" show not only a misunderstood but a real fright, like this child who said: "the father fucks the mother and the mother suffers, endures". This example shows us the importance for the child to be able to understand exactly what the sexual act means, making him realise that it should be something where feelings are involved and during which both man and woman should discover pleasure.

In direct relation with the sexual act, we noticed confusion between the excretion and reproduction's system. The vagina and the uterus are usually completely unknown by the children. The baby is in the womb, this one could be stomach or intestine, without any distinction. When the children know that the baby goes out the womb through a "hole between the legs of the mother", this one is generally mistaken for the urethra or more rarely for the anus. The book presents a model where the children could easily find the difference between these different organs.



The different steps to present the baby inside the mother's womb

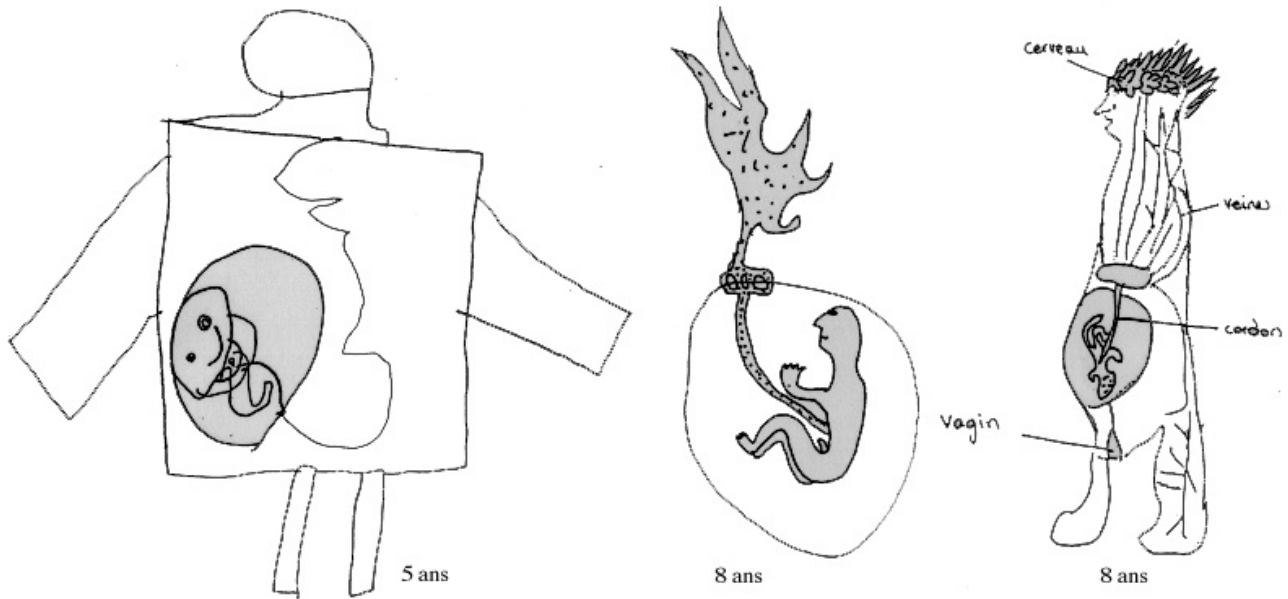
This model is also corresponding to the conception, about the way the baby is feeding and breathing inside the mother's womb, as you can see on the last illustration. This picture presents no direct connection between the mother and the baby. It is showing, very simply, the travelling of the food through the digestive tube, the isolation of the bladder and the specific place of the baby. Of course, everything is very schematized; the aim is not to give the child an anatomic lesson, but a way to understand the bases of the body's functions. Playing with the superposition of transparent sheets, the interaction between the different systems, and especially between the mother's body and the baby, appears when we are putting on the blood system.

A lot of time during the interviews, some "scientific" words are using by children, but in a wrong way. This fact usually hides bad misunderstanding of the processes. The used language's book suppresses all scientific words inside the basic text going with the pictures. The urethra is just the "hole for the wee-wee", the anus, "the hole for the poo" and the vagina, "the special baby's hole". So, the child knows exactly what the book is talking about, and refers to his own life experience. The utilisation of a plain language allows going quicker over the embarrassment about this subject. If the child sees that the adult is using his own vocabulary to speak about these physical orifices, he is freer to talk about them. Of course, if children want to know more about a subject, each text has a second, even a third information's level, where the specific scientific words are given.

Conclusion

This presentation is just to give an idea of the incredible richness if using the children's conceptions when creating didactic tools. If we really want to help children to go beyond their representations, using them is absolutely necessary. Even if, like in the case of a book, we must accept that we won't be able to know all the conceptions of each child, and if we have to make some definite choice. The

originality of this book resides also in the direct confrontation between the child and his own conceptions. It would be interesting to go further with this experiment, to see if this confrontation is a real help to improve and understand new scientific knowledge. Even if we couldn't clearly establish where the apprenticeship was coming from, we could see a real evolution or transformation of the conceptions for the majority of the children.



Post-test where the placenta is drawing

The experiments we made into the different classrooms showed the great children's interest for this book. We also received a lot of requests from parents and teachers who wanted to buy it for themselves. It seems that children love to have a look at it, on their own or with friends, even without the adult being present.

As it is shown through the evolution or the transformation of children's conceptions to whom this book had been presented, using them does not only mean creating didactic tools; it is also useful in the evaluation of their impact and in the evaluation of the pupils themselves. Children's conceptions give us the opportunity to really visualise where some remediations should be done.

Creation, evaluation, and remediation, three complementary ways to use learners' conceptions without conceiving "a priori" some helps or didactic sequences.