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ABSTRACT

This document presents information on open learning environments in Adult Basic Education in The Netherlands. It focuses on the role of teacher, tutorial, progress, and evaluation methods. Several task groups address the four dimensions in a learning environment: accommodation, time, infrastructural, and social psychological. Through independent learning, the student has to take the responsibility for his learning in a very open and aware manner. During the learning process, he must be aware of the way in which he learns, what he learns, and why he learns. For educators, their way of thinking has to be reversed. Instead of suppliers who offer what they think is necessary, they have to become educators who listen to the demands so that their teaching is flexible and individual. (ASK)

Independent Learning: Numeracy Developments in ABE Practice

by
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WHY DID THE REC START AN EXPERIMENT WITH INDEPENDENT LEARNING

The changed demand from our students and from society forced the REC to think about its approach to education. Efficient and effective education to keep costs down and to motivate students as well as teachers is needed -it was decided. The question was: how to do that? The newest development in the educational field is independent learning. The student is the key figure. Being the key figure, the student has to take the responsibility for his learning in a very open and aware manner. During the learning process he must be aware of the way in which he learns, what he learns and why he learns.

For us educators, our way of thinking has to be reversed. Instead of suppliers who offer what they think is necessary, we had to become educators who listen to the demand, so the education can be adapted to what is needed. Practically it means that our education has to be flexible and individual. Conditions and opinions about education, especially about the role of the teacher, had to be changed. With lots of doubts and a very positive feeling we started an experiment. Several task groups started:

- A group which co-ordinated the experiment and developed our vision about and principles of open learning.
- An open learning environment group, their task was to develop an efficient and effective learning environment.
- A group which made subject modules.
- A group which developed tutorials.
- A group which developed individual tutoring, for example the progress instruments.

Involvement from everybody was needed. Last March we started in the new open learning rooms with independent learning. Each week we evaluate our way of thinking and if needed adapt our education. In the following we tell about the open learning environment, intake, the way of working in group I and group II, the role of the teacher, the tutorial, the role of the teacher, the tutorial and the progress instruments.

THE OPEN LEARNING ENVIRONMENT

The geography of the classroom stimulates the students to cooperate, to offer help to each other and to ask help from teachers. The outcome is that students become aware about their way of studying and the goals they have set. The learning environment stimulates the students to work in small groups which makes them keep pace.

We distinguish 4 dimensions in a learning environment:

- accommodation dimension
- time dimension
- infrastructural dimension
- social-psychological dimension.

The accommodation dimension

There are 5 classrooms consisting of two flexible learning rooms, a level 1 classroom, a study centre and an audio-visual room.
The flexible learning rooms can accommodate all kinds of didactic methods of learning:

- places where the student can work individually
- working corners for groups of 2 to 4 students
- a circle of tables where a teacher can work with a group up to 15 persons
- corners with computers
- a sink unit
- a tutorial corner
- a quiet room
- many cupboards with educational appliances which are also used as partitions
- module cupboards
- whiteboards
- notice boards

These rooms invite one to study, they are painted yellow and red. The level 1 classroom is a small classroom with a big circle of tables. The study centre has many computers and a library. The computers are also used for Internet. Next year we will cooperate in a project for learning arithmetic/mathematics on Internet. The audio-visual room has the necessary equipment.

The time dimension

- Lessons are each Friday from 9.00 am till 11.45 am or Wednesday from 7.00 pm till 9.45 pm,
- The first hour we work on an integrated mathematical problem and mental arithmetic.
- The rest of the lesson the student decides on his own pace of working, didactic way of learning and the contents of his study material.

The infrastructural dimension

- no wait for computers or other education appliances
- a help desk: the teachers who walk around and other students
- all educational appliances can be used at home except some software

- all educational appliances where possible are made suitable for independent learning, therefore they have to be self-instructive and corrective

The social psychological dimension

- there is more than one place where students can work together or alone
- each student is treated with respect
- there is a system of supervision with understanding for the social and personal circumstances of the student
- the environment is friendly and stimulating

INTAKE

The intake are screened using tests and conversations done by specially trained staff. Depending on these results a student is placed in group I or group II.
Group I: students who are placed in this group score on arithmetic level 1 and/or are too much dependent on others for their study and /or do not have enough study skills.
Group II: in this group students can be expected to study independently or learn to study independently in a reasonable amount of time. They score in the minimum level 1 of arithmetic.

GROUP I

One teacher supervises this group. In this group the students have many conversations about their emotional involvement with schools and their problems with numeracy. By working with realistic arithmetic problems the students learn skills to solve these in their own way. The students develop their own solution strategies. It is very important that they explain to each other their solution strategy. In that way they remember the solution strategies far better, they get a positive feeling and learn to work independently. Arithmetic skills are matched with study skills and social skills based on the principle of plan-do-review.

The teacher must take care that the students become aware of their own capabilities. Awareness is the keyword for students of all levels. The second half of their lesson they work in a flexible learning room together with the other group. In that way we try to make the transition to group II easier.

GROUP II

This group consists of 36 students who are supervised by 3 teachers. Each teacher supervises two tutorial groups of 6 persons. It is very important for the students to have their own contact teacher which can give a feeling of belonging and to have someone to confide in when necessary.

INTEGRATED MATHEMATICAL PROBLEM

The first half-hour each teacher works with his own group of 12 students on an integrated mathematical problem. Mostly the students work in small groups after the

introduction of the problem. The teacher leaves students to work independently often by walking out of the room. After solving the problem solution strategies are discussed with the group under supervision of the teacher.

MENTAL ARITHMETIC

The second half-hour two teachers do mental arithmetic and one teacher does a tutorial. The total group is divided in two levels of mental arithmetic. Speed and developing solution strategies are the learning goals.

PLAN-DO-REVIEW

The integrated mathematical problem and mental arithmetic are the moments in the lesson where students practice voicing their way of thinking, their communication skills, asking and being explicit. It is a very linguistical process in which the students learn to have an independent and critical attitude close to structural thinking: plan-do-review

PLAN
- What's it about?
- What is expected from me?
- What do I know about it?
- Which steps do I have to take to tackle this problem?

DO
- Solving the problem
- Constantly asking if this is the right way
- Working together on the problem
- Asking each other how are you doing it?

REVIEW
- Did I reach my goal?
- What did I learn?
- Am I satisfied about myself?
- What do I want to learn next time?

INDIVIDUAL ROUTE

For two hours the students work in the flexible learning rooms on their individual route. According to the test results and the learning wishes of the student a route is made in consultation with the student. The route can be re-adjusted each week. Students see together what kind of possibilities there are. They stimulate each other to do a certain module or computer program. The students decide on working alone or in groups from 2 to 4 persons. During the consultations between each other, students learn to decide what they won't do in a module or what is particularly important for them to do. The teacher respects these choices but consults with the student if a certain piece of a module or a whole module must be done because of the

goals which are set. Student consult with each other on the amount of homework they will do, when necessary the teacher takes part in the consultation.

TEACHER

Observing-Analysing-Directing

The main tasks of the teachers are observing, analysing and directing the process of learning.

When dealing with the integrated mathematical problem and mental arithmetic the teacher offers the problem, gives advice sporadically and makes the students discuss their solution strategies.

During the individual route the teachers walk around, do arithmetic/mathematical conversations in which the plan-do-review principle is the basic structure, control the progress the students make, sign the logbooks and make notes for themselves. The teacher is a supervisor, therefore he is the one who offers structure to the students. During the process the task of the teacher is diminished. The attitude of the students becomes more and more independent.

PHASES IN INDEPENDENT LEARNING

The critical and questioning attitude of the teacher makes the student work consciously: What did I learn? What do I want to learn? What motivates me? What went well? What went wrong? Why did it happen this way? Each student is constantly analysed to see how much supervision and guidance is needed.

We work according to the principle of diminishing supervision:

phase 1	the teacher as demonstrator
phase 2	the teacher as activator
phase 3	the teacher as coach

PROGRESS INSTRUMENTS

The purpose of the progress instruments is to make the progress visual to the student.

Plan board

The plan board on the wall helps the students to form working groups. The plan board gives a schedule of the possible modules a student can do. The schedule shows who is doing which module, therefore the students can choose with whom to work. It also makes the progress a student has made visual in a positive way. Consequently the student is stimulated to work hard.

Log-book

Each student has a log-book in which his individual route is noted in modules, extra subjects and computer programs. Each week the student notes what he learned and what he made. He also plans what he will do next week. The teacher signs after tests. The logbook is a concrete aid when the teacher talks with the student about the progress he made.

TUTORIAL

In group I tutorials are not given. Every two weeks a preparation for tutorials is given. In group II every 3 weeks a tutorial group has a tutorial.

The REC choose close to one to one supervision for tutorials, because the effect is far greater when students learn from each other by exchanging their learning experiences. They recognise each others impediments and support each other.

Goal of Tutorials

- Promoting independent learning addressed to a concrete action.
- Supporting the student
- Discovering problems or impediments with learning.

Procedure

Each tutorial has a set of rules.

1. The complete agenda must be made in a maximum of 30 minutes.
2. A tutor group consists of 5 to 6 persons
3. The tutor works mainly in a non-verbal manner to prevent him from taking part in the discussion as a teacher.
4. The students control the time and the agenda.
5. After each tutorial all students have a concrete action to improve their learning.
6. The student writes in his log-book his action.

An individual action plan to improve learning is worked on.

The Role of the Tutor

At the start of the tutorial the tutor tells what's on the agenda. The students begin with their conversation. When necessary the teacher asks questions to elucidate. Another task for him is to ensure procedures are followed.

Agenda

1. Introducing a learning problem
2. The students talk about their experiences with that problem. All students get a turn. Advice is also given to each other.
3. Each student formulates a concrete action he must undertake in the coming weeks.

The student writes in his log-book his action. The next tutorial the action is evaluated.

EVALUATION MATHS

author: student Jacqueline

Procedure

I've learnt so much in this school and it is fun to learn, too. At first we were taught by one mentor but later-on that changed and we started flexible learning.
I hear you asking: "What's that?" Let me tell you:
The first hour you're working in your own group trying to solve a mathematical problem; together or on your own. We call it an integrated mathematical problem (I.A.P.). Other classes to the same thing. After that we go to the big maths classroom together with our teacher and there we meet the students and teachers. You're allowed to ask help of other students or one of the teachers. Now you can set your own pace and do sums at your own level, which is a lot nicer, therefore you learn more. So that's the fun of flexible learning. By the way you can discuss any problem with your mentor; even if you can't attend a lesson. And then there are the tutorials; you gather around a table with your own little group and talk about your results and things that went well and what to do if not.

What did I learn?

I've learnt to have more confidence in myself. Things succeed when I plan on paper and work from there. And yes, that works for me. And apart from that I've learnt to work with spreadsheets, percentages and fractions, formulas and basic maths, which I liked a lot.

Which material?

I work on the computer with spreadsheets and from books with sums about percentages, fractions and maths.

End of Term Assignment

I got the task to organise a real lunch for all students and the teachers. At first sight I thought it was a good idea and I still think it is, but it slapped me in the face when I found out what it implied, my knees felt like jelly. But now I'm well on my way and I'm enjoying it every minute. To organise this lunch we started by writing down all the ideas different people had including students of other maths groups. After that I had the honour to decide what we were going to do. Then I had to write down an allocation of the tasks, I made a list of things to do and buy and everyone could put his or her name on the list. In advance we had worked out an estimate calculation of expenses. After that I calculated how much everything would cost and how much stuff everyone needed to buy. Finally they have to hand in their receipts so I can settle the account.

Remark

I'd like to say something about the integrated mathematical problem. It is fun to do because it is always a general topic/theme and no matter at what level you are, it's useful, but sometimes it's hard to hold back and not to prompt, if a fellow student needs more time to think. Sometimes it gets boring for a student with a higher level.

My future plans

I want to attend a training course to become a security officer. The training lasts half a year and after that I hope to find a job.

ADULTS LEARNING MATHS
A RESEARCH FORUM (ALM)

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