The user guide

Teacher

Craftopolis, the creative learning environment, guides students to creativity and encourages the use of multidisciplinary information and problem-oriented processes in flexible and versatile ways in order to find, develop and design more consumer-oriented products. The new product concepts can be based on stories, history, culture, trends and customer information. The learning environment concentrates on handicraft areas that are based on manual skills and aim to produce goods for customer markets, e.g. textile, leather, glass, metal and wood.

Tasks, the roles of the learning environment and the teacher

The pedagogic approach of the learning environment is constructive. The students actively build information on the earlier learnt. The 54 tasks are built on three levels of difficulty.

The first level is to practice basic skills in different subjects. On the second level the students start to combine the information they have learned. The third level is the most demanding: it includes holistic problem detecting and solving, and it requires the skills obtained from both preceding levels.

There are three levels of difficulty for the tasks:

Level 1: Tasks separated by themes, each task focusing on one theme only. Learning basic information and gaining understanding of themes to be later able to use and apply the information learned. Starting to understand problems.
- Tutoring: the highest level, lots of instruction
- Amount of tasks: the most
- Difficulty level of tasks: the easiest

Level 2: Starting to apply the information learned and to unify themes in tasks.
- Tutoring and instructions: medium level
- Amount of tasks: medium level
- Difficulty level of tasks: medium level

Level 3: holistic problem solving using all the information learned and all the themes. The student should be able to detect and solve problems alone.
- Tutoring: little tutoring and instruction

- Amount of tasks: the least, but the most complete tasks
- Difficulty level of tasks: the most difficult
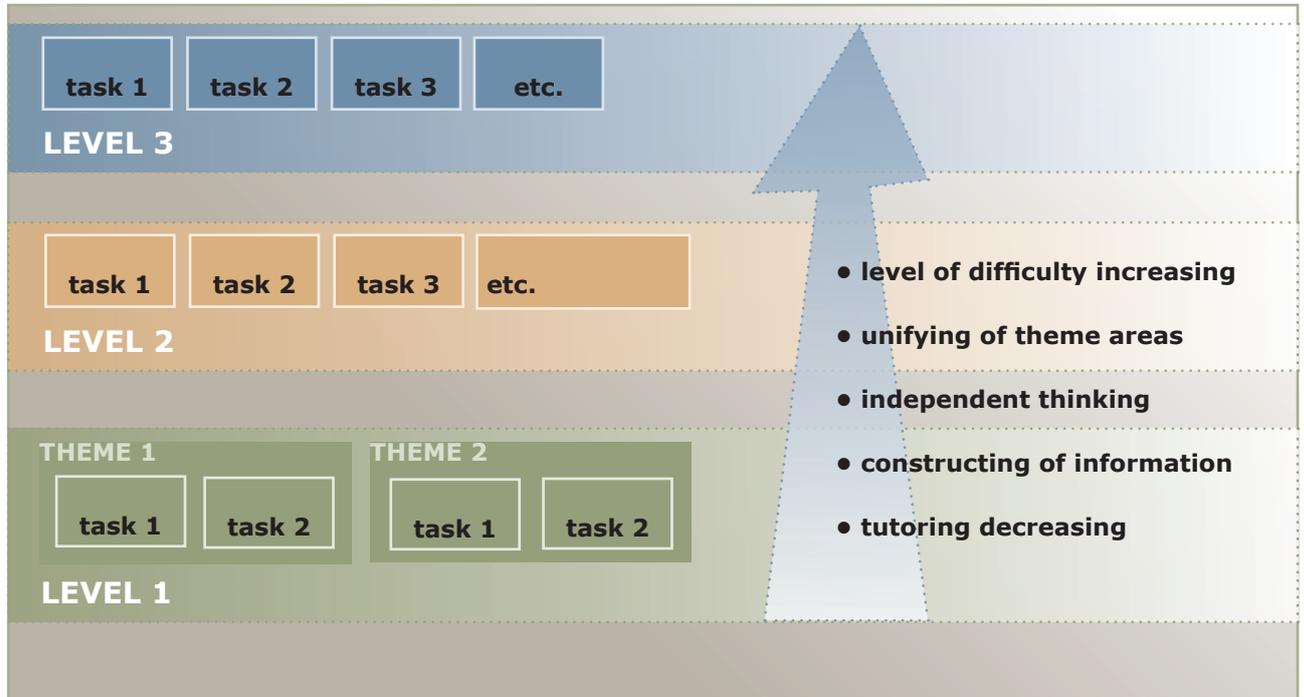
The tasks in the learning environment are prepared around nine themes, which all aim to answer to the challenges that handicraft is facing. The themes are: creativity, culture, entrepreneurship and real life, handicraft, marketing, problem solving, product development, stories and history, and trends.

The structure of the levels of tasks can be compared to the description of the process of creativity by Wallace (Guilford, 1966): level one is for preparation; level two, incubation and practicing, and level three can be described as illumination, verification and testing of solutions. The form and logic of the tasks is mostly based on creativity methods. This is how the student will learn creative thinking by doing.

The three-level system of difficulty in the learning environment functions as a tutor. At the same time the teacher observes and tutors the students' work. Each level of tasks must be completed before moving to the next level. It will be the teacher's responsibility to move the whole class together to the next level.

Flexible and versatile learning environment

The learning environment is a teaching/learning tool. It is flexible and versatile, and therefore does not require a certain didactic model, nor changes an existing didactic system. For example the learning environment can be applied to three years of studies, or to just one year.

The learning environment is also flexible on the class level. It contains a pool of 54 tasks of which the teacher can select the most suitable one for the teaching purpose. This way the teacher is able to control what has been learned earlier, or even to leave out tasks from a subject that students have already mastered.

The learning environment is virtual. This enables distance teaching. It can be totally virtual or teaching can also be organized partly in class (e.g. feedback, craft working samples). The teacher decides which method suits the class best.

Creativity and student

Creativity is about finding new solutions and seeing things differently. There are no absolute wrong or right answers in creativity. The creative learning process is dynamic because no knowledge is absolutely constant and applicable ad infinitum.
There are two kinds of learning systems: an open-ended and a closed-ended system. In the closed-ended system the problem solving process is linear, logical and controlled. It does not allow new uncontrolled elements. In the open-ended system the problem solving process is open, avoiding direct controlled situations: new unexpected elements appear and boundaries can be redefined during the problem solving process. (Rickards 1975). Because of its unstable and organic nature, it is difficult if not even impossible to teach creativity using a pedagogical theory in which the information is given to students as stable and absolute. The open-ended model enables creativity and experience during the learning process. Creativity plays a big part in the problem solving processes.

The difficulty is how to teach creative thinking to students and how to support teachers during their efforts guiding students towards creative thinking.

Jan-Erik Ruth (1985) has crystallized three characteristics from various researches to describe creativity: new, somehow original idea; flexibility and thinking without boundaries; and fluency – it is typical to creative thinking to produce a flow of ideas and the readiness to change the way of thinking.
Ruth points out that divergent thinking is typical for a creative person, referring to Guilford's idea that a creative person produces multiple ideas of the given information. The focus is on the quality and flexibility of the material.

It is important to support students to observe what happens around them, to see things differently, accept contradictory, incomplete and insecure things, face challenges, teach them to be open to all ideas – there are no bad ideas

or conventional limits. Encourage the students to trust their feelings and be open to new ideas, to look to themselves and the environment, utilize their own experiences, do not criticize others during brainstorming sessions, do not make routine decisions just because, develop independent evaluation ability and ability of perception. The ability and will to deal with essential factors in the internal and external world is important, as is the ability to experience strongly theoretic and aesthetic values, and to try to accept errors. The best things might be born out of error. Note also the will and ability to learn and train the techniques and theory of traditional arts!

Below Krippner's list of features that hinder development of creativity (1967):
- Everything must be useful and usable
- Everything must be successful
- Everything must be perfect
- Everybody must be like you
- Do not accept loneliness at the expense of being in group
- Focus on making observations
- Do not depart from the conventional cultural sexual roles
- Do not express strong emotions
- Do not be ambiguous
- Do not rock the boat of culture.

Jorma Heikkilä (1985) has listed methods form various scientific sources to help the child to develop towards artistic creativity. You can apply these to your tutoring process.
o Respect the child and allow him to freely investigate the environment.
o Create a stimulating, growing environment for the child using music, literal material, images and other cultural products.
o Handle with respect the ideas, solutions, questions and opinions the child has produced.
o Respect the child's individuality.
o Respect the unusual reactions and divergent thinking of the child.
o Help the child to learn from his mistakes.
o Avoid norm and stereotypical gender roles in the upbringing of the child.
o Encourage experimental self-expression and finding and developing natural channels of expression.
o Teach the child to look within himself and from the environment for concrete factors that help in problem solving.
o Help the child to learn that in artistic work he must trust his sense perception.
o Allow the child's natural creativity to expand and develop.

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