

# TEXTILES IN PROJECT-BASED TECHNICAL EDUCATION OF FUTURE TEACHERS AT THE TIME OF DISTANCE TEACHING

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## Abstract

The contribution pays attention to the characteristics and analysis of utilizing artistic and technical activities in project-based teaching, focused on working with textiles in the education of future teachers at the time of distance teaching. It presents possibilities of application of artistic and technical procedures within the framework of the project-based teaching design. In the preparation of future teachers at the primary level of education, these represent the backbone of the implementation of textile techniques and textile artifacts as well as textile-inspired artworks. The attention is focused on important aspects related to the artistic work and craftsmanship, with regard to intersectional relationships between subjects in the educational process. It points to possible overlaps of artistic and technical activities together with their potential in the modern pedagogical space. The contribution was created as a part of the grant project VEGA No. 1/0550/22 Current state, trends and problems in technical education at the lower and upper secondary level of education in the context of distance teaching, whose responsible researcher is doc. PaedDr. Zlatica Huřová, PhD., (2022 – 2024).

**Keywords:** *technics, production technology, preparation of future teachers, textiles, textile techniques, distance teaching, project-based teaching.*

## INTRODUCTION

Learning in new ways, both in the past and today, represented the process of actively gaining experience and knowledge as a result of the independent work of pupils. John Dewey and W. H. Killpatrick, representatives of American pragmatic pedagogy (progressivism), which was formed together with pragmatic philosophy, elaborated on the project-based and problem-based teaching, which became an essential means of humanization and democratization not only of education, but also of school as a whole. John Dewey is considered to be the main representative of pragmatic pedagogy, which stems from the strongest philosophical current – pragmatism (pragma = action, activity), and constituted of a philosophy of experience, containing the unity of the real and ideal, as well as of values and facts. Pragmatic pedagogy was conditional on the entity's interest in responding to the external environment. Today we can claim that J. Dewey and W. H. Killpatrick laid the foundations for the project-based as well as problem-based teaching, and together with Lay and Kerschensteiner, they promoted work education and technical education to a higher level. It is necessary to highly appreciate the elimination of the detachment of school from a person's natural life, because it was precisely through their philosophy that the schools respected and fulfilled one of the many didactic principles of J. A. Comenius (In: Huřová, 2017).

Project-based teaching differs from traditional teaching in its objectives, which are defined with respect for the uniqueness and specificity of pupils/students, in its content that can be modified with regard to their interests, development of competences and creativity. It differs fundamentally in its procedures, methods and forms ensuring the development of creativity, activity and cooperation. The organization of the teaching process, in which the integration of subjects, the position of the teacher as facilitator,

counsellor, and guide, play an important role. The position of pupils/students itself also differs with their own spontaneity, autonomy, imagination, discipline, tolerance with the possibility of their own interventions into the search for information, as well as responsibility. The position of parents, who change their approach not only toward cooperation with the school, but also toward the teaching itself, is also different. The abovementioned can also be considered to be the general positive aspects of project-based teaching.

In the educational standards for technical education, the education of students – the future teachers of pre-primary and primary education – also includes various traditional and non-traditional technologies and procedures of working with different materials. Therefore, the planned activities in project-based teaching focused on working with textiles are also focused on several areas of technological procedures based on traditional craftsmanship and production. In our case, the consideration is given to working with various materials with an emphasis on textile and textile techniques.

Textile, textile techniques, as well as various textile procedures contribute to the acquisition of knowledge about the folk culture of Slovakia, and thus reinforce national awareness and cultural background of individuals. In the same way, they also contribute to the development of fine motor skills, promote technical, creative, and logical thinking, and, in the right settings, they develop artistic feeling, which should be promoted and fully developing even at the time of distance teaching.

## **1 TEXTILE AS AN ARTEFACT OF FOLK ART AND TEXTILE TECHNIQUES AS A SUPPORT FOR THE DEVELOPMENT OF CREATIVE TECHNICAL THINKING IN PROJECTS AT THE TIME OF DISTANCE TEACHING**

Textile can be characterized as an umbrella label of all textile raw materials, both fibrous and non-fibrous, products made thereof, as well as textiles in handmade production. Textile products are felts, twists (e.g. threads and cords), knitted, woven, and bound textile made of threads and cords. Textile materials are articles made of textile for a specific purpose and with a specifically designated function: for example, clothing, farm, ceremonial textiles, etc. (Zajonc, 2011). Competence of each teacher at different levels of education includes taking into account and presenting to students at the appropriate level the specifics and differences of visual arts and technical education always together with their characteristic differences.

Thanks to a well-managed cooperation of these disciplines, the students – future teachers – gain the joy of creative work, and a sense for aesthetic and ethnographic values (Gašparová, 2018). Textile culture specifically is a sufficient inspirational resource, which will be complemented by the educational process with a number of interesting and experiential techniques. An ideal example of creative work is getting to know the individual work procedures that constitute the basis of production, but also of the beautification of textile materials and textile garments (e.g. managing weaving on the frame, looms, or production of embroidery or textile applications).

## 2 TEXTILE AND TEXTILE TECHNIQUES IN PROJECT-BASED TEACHING

Project-based teaching and project creation are a popular didactic approach in the current educational space. Their application is offered in all types of education, from the pre-primary to the university educational process. It is an ideal approach for educating future teachers on the primary level of education. Kubínová (2014) sees the project and project-based teaching as a type of educational strategy based on the student's active approach to their own learning. Project-based teaching makes it possible to: fulfill the needs and interests of students, develop their abilities, strengthen self-regulation, execute a change in the roles of teacher and student, execute teamwork, update school initiatives, apply interdisciplinarity and orientation to present one's own work (In: Bačová, Novak-Ducká, Onušková, 2014), but also support initiative and gumption, all in three phases of the project: preparatory, main and final part of the project creation.

At the beginning of the winter semester, students were given the project topic as part of the project-based teaching at the time of distance teaching:

**Topic:** *Production of traditional folk costume elements as part and a feature of a dance ensemble*

**Students:** Teaching for primary level of education

**Time:** Distance teaching in the winter semester 2021

**Goal:** Recognize and know how to make individual parts of a folk costume utilizing textile and textile materials.

**Methods and strategies:** working with digital technologies, practical activities, trial-error, experimentation, observation.

### ***Progress of activities during the preparatory phase of the project:***

In project-based teaching focused on textiles, we gradually become acquainted with the current technical background, which is necessary for the execution of textile techniques. However, it is equally important to know all the partial historical, ethnographic, technological, or artistic contexts. These include techniques of creating fabric, knitwear, or various types of binding, felting or spinning. Students have the necessary portfolio containing the essential didactic-technical material at their disposal. To aid in the teaching process itself, a set of manuals, methodological handbooks, photo tutorials or video recordings are prepared in order to also serve during the distance teaching. In addition to the classical present form, the execution of teaching can thus also be ensured through videoconferencing and e-learning. The scope of the proposed activities consists of important theoretical contexts, work procedures, as well as the execution itself.

### ***Progress of activities during the execution phase of the project:***

Students are familiar with the necessary raw materials for textile production, the textile production procedures themselves, the textile decorating procedures, as well as the final result itself. They gradually manage to carry out the textile procedures. These represent the fundamental techniques of spinning, weaving, knitting, felting and

decorating of textile. Custom innovation and a combination of techniques also serve as one's necessary equipment for mastering various textile procedures.

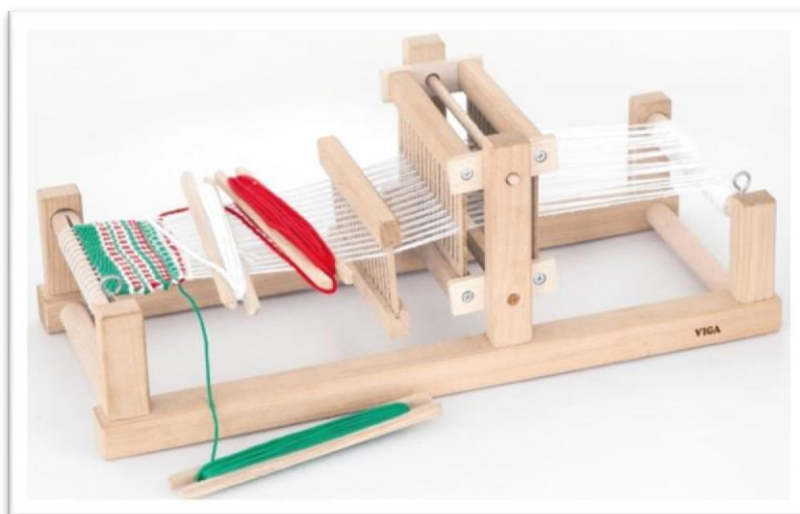
A part of getting to know textiles is also their material, technical, and visual analysis. Search for possible inspirational contexts that textile components carry within themselves.

In a separate phase, students work with new technologies that allow them to create various digital procedures for capturing the progress of work in individual activities aimed at the production of individual components of folk costume as a part and element of the university folk dance ensemble.

### **1<sup>st</sup> activity: Weaving on looms**

In this case, the activities are aimed at mastering the basic procedures of making textiles. Attention is paid to the technique of weaving, in which the rectangular crossing of two sets of threads (warp and weft) creates a fabric – a canvas. In individual activities, students get to know the basic binding patterns of fabrics (canvas, twill, ribs, etc.), but also the technological process of weaving on horizontal frame looms with heald shafts, or weaving of weaves using a plate and various natural materials (cotton, linen, hemp, etc.). Individual activities contribute to and ensure an understanding of domestic craftsmanship in folk material culture.

The result is to master the basic procedure of warping and weaving.



**Figure 1. Weaving on horizontal frame looms with heald shafts**

Activities that are intended for future teachers at the primary level of education are aimed at mastering the basic procedures of making textiles from the acquisition of knowledge about technological processes, to the final execution itself. Participation in these exercises makes it possible to get to know the supporting fundamentals of textile techniques as well as their subsequent application in possible inspirational stimuli in contemporary textile or graphic design.

The execution of individual activities takes place via a distance form of teaching. Innovative improvements include methodological manuals, guides, instructional and educational videos or photo tutorials, which are gradually being prepared.

A set of appropriate activities is gradually being developed in order to ensure that traditional as well as modern procedures are acquired, which will promote the development of key competences and the interconnection with practice. The proposed activities promote technical and IT literacy as well as one's relationship and respect for national identity.



Figure 2. Students while weaving on horizontal frame looms with heald shafts

**2<sup>nd</sup> activity: Embroidery and lace – basic production procedures:**

Embroidery presents a way of modifying and decorating textiles with various stitches with a needle, newly also using a sewing machine, spike, scissors or embroidery frame. In Slovak embroidery, we can find a number of stitches and their combinations. In terms of technical procedures, we distinguish between:

- embroidery based on counting thread – stitches are embroidered by subtracting threads;
- pre-drawn embroidery, in which the stitches are embroidered according to the drawing;
- appliqué, in which an ornament from another material is sewn onto the base fabric (Danglová, 2011).

Individual activities involve getting to know particular types of embroidery. Specifically, this includes pre-drawn embroidery, embroidery with a flat stitch, embroidery with a hooked needle, perforated embroidery, white embroidery, embroidery based on counting thread, cross embroidery, etc.



Figure 3. Students during embroidering of the selected parts of the costume

Another suitable accessory is a textile lace as well as lace made of other materials. Lace can be characterized as a self-supporting, almost exclusively openwork (see-through), knitted, possibly tied, or also woven textile. The function of lace was to line, strengthen and protect the edges of textiles, to connect individual pieces of textiles within the fabric, to create flexible and airy parts in the textile, for instance in case of rigid inserts in bonnets and shirts. Bobbin lace has existed and still exists in the largest proportion of local and regional forms in Slovakia (Zajonc, 2011).

During the project-based activities, we also devote time to lace, which is made by using looms, needles, forks, hooks (crocheted lace), etc.



Figure 4. Making of bobbin lace and crocheted lace

The creation of textile appliqués is also an appropriate way of getting to know textile culture. It is a method of decorating, in which a cut pattern from a different material is sewed onto the base fabric.

In Slovakia, it is extensively used in decorating of broadcloth components of outerwear (Danglová, 2011).

That is why the third activity was also focused on making accessories and ornaments as part of the costume.



### **3<sup>rd</sup> activity: Making of head wreaths, bonnets, hair ribbons, headbands, bracelets**

In the conditions of primary level of education in Slovakia, the most common technical education exercises include working not only with textiles, but also with natural material or wire. Individual materials are also appropriately applicable when getting to know textile techniques. It is essential that future teachers are sufficiently prepared for this work and activities. With regard to the State Educational Programme for Primary Education, not only the pupil but especially the student should know how to:

- make a product from natural or technical material (in our case textile),
- make a product from textile or textile threads,
- make a textile product using simple stitches: front, back
- make simple products related to folk traditions. In the creation of folk-themed puppets, regional education plays an important role, because it comprises a whole section within its content portfolio, in which it focuses on cultural monuments, traditional folk culture, as well as the context of multicultural education (Gašparová, 2018).
- make a product according to the instructions with a required accuracy,
- make a product from textile combinations
- design ornaments and accessories related to folk traditions (e.g. application, appliqué),
- create ornaments and accessories,
- make products related to folk craftsmanship.

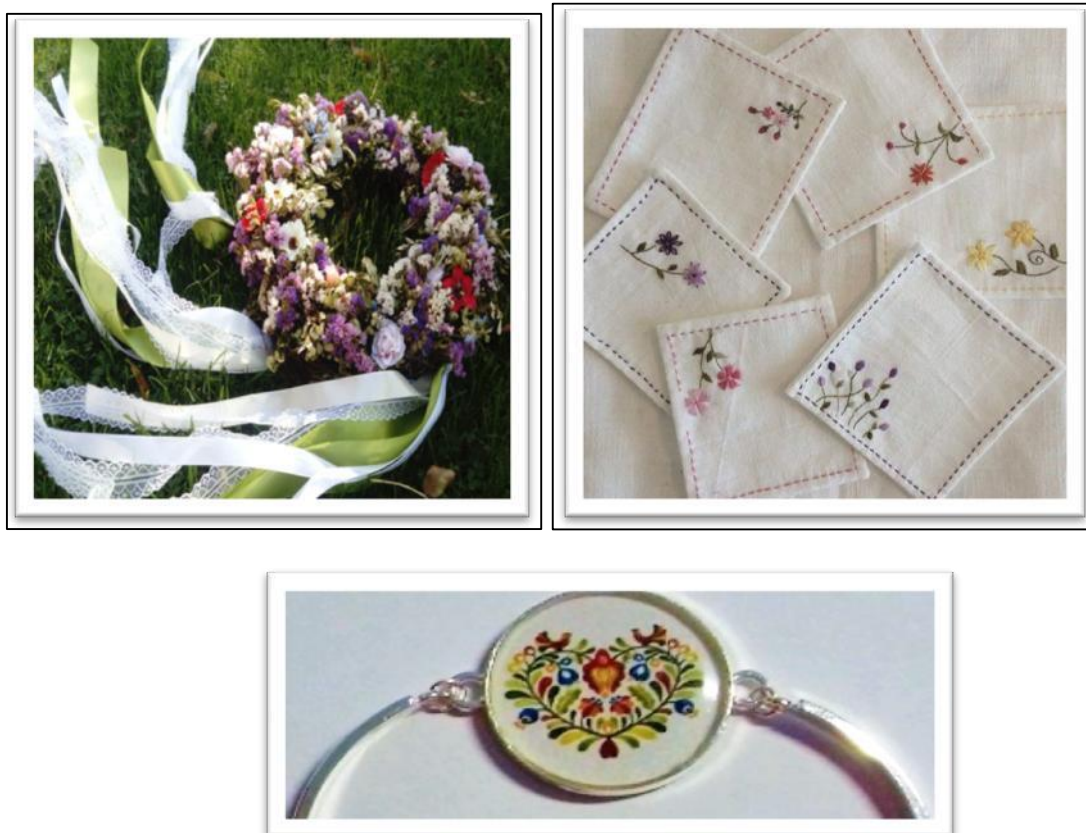


Figure 5. Student works during the creation of accessories for folk costumes

### 3 TEXTILE IN PROJECT-BASED TEACHING AS A SOURCE OF INSPIRATION FOR ARTISTIC, MUSICAL CREATIVITY, AND INTERSECTIONAL OVERLAPS AT THE TIME OF DISTANCE TEACHING

Textile finds its application in several types of art, but also in various intersectional relationships and contexts. It is an important inspiration that finds its application in artistic activities and acts, whether a receptive or active aspect of getting to know textile is concerned. In a traditional textile culture, there are many inspiring artifacts that can be applied in modern textile design, but also in various utility and computer graphics and design. Determination of characteristics of individual materials, such as plant-based, animal-based, or synthetic, supports the development of one's knowledge of natural history. Ornamentation, or important coloring contribute to the development of imagination and creativity of pupils.

The control over individual procedures likewise contributes to the development of manual skills and technical imagination. Educational needs of the future teachers – who are now students of teaching on the primary level of education – are fulfilled using the study collection, which is part of a unique workplace – Centre for Ethnography and Arts (C-ET-ART). It is a deposit of artifacts of ethnographic, artistic, and musical character, which serves to streamline the teaching process, and support the professionalism of each student.

#### ***Progress of activities during the execution phase of the project:***

In the final stage, students present their products as part of folk costumes. At the time of present teaching, the students present not only their own products, but also the costumes in which they perform and lead children in a dance folk ensemble, in which several of them are active.

During the presentation of the project, including its individual acts and products, students demonstrated their ability to create, show proactivity and gumption, demonstrate their presentation skills in order to present their newly acquired technical knowledge and skills in the best and most interesting way.



Figure 6. Slovak folk costumes, some of their components and accessories made by female students as part of the project-based teaching in distance education





Figure 7. Children's folk ensemble led by our students

At joint meetings, students familiarize children with traditional techniques, and then apply them with overlaps into different types of arts and participatory programs. The space of the Faculty of Education, Catholic University in Ružomberok, gradually creates a deposition, or a collection of folk artefacts, which are in a tangible as well as digital form. Therefore, the students are able to implement a number of traditional textile artifacts into different programs, and into the space of contemporary design.

## Conclusion

Project-based teaching mediates complex cognition and holistic development of personality not only of pupils, but also of students – future teachers. It offers them the opportunity to more frequently formulate their own ideas, opinions, express ideas about their own activities, and those of others. They gain a greater opportunity of leading conversations, as well as being able to take their own stance and learn to argue. It also promotes being capable of self-evaluation and evaluation of other. In addition to the abovementioned, the future teachers develop their initiative, autonomy, creativity, gumption, mathematical, logical and critical thinking, ability to cooperate, ability to communicate, ability to solve problems, and the ability to search information. By means of the project-based teaching, they learn to create interesting and useful objects, make various products, and improve their presentation skills. When planning, they learn to plan, design projects, and organize their work, develop it, overcome emerging obstacles, learn to endure the process and finish the work, but also to be responsible for it. Project-based teaching in the preparation of future teachers is inspiring, and in the 21st century, it in many ways brings students the joy of acquiring new knowledge and learning by means of using concepts and innovative trends of the 20th century.

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