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Assessment of textile craft products' creativity in the Latvian competition for pupils

Abstract

The purpose of the research is to explore the results of pupils' creative activity in a competition in textile craft in Latvia and to find trends in the creation of textile craft products. The applied method is the analysis of creative work items made by pupils from Forms 6–7 (N1 = 106) and Forms 8–9 (N2 = 132): photos, designs and textile craft products. Among the hand and foot garments, the most popular products in both age groups were fingerless gloves. The knitting technique was used most frequently, and most of the items were wearable. Creativity predominantly manifested in the combinations of colours, techniques and materials, followed by creative technology solutions and creative product shapes. The results regarding creativity were higher for the creation of textile craft products than for creating designs.

Keywords: competition, textile craft, sources of inspiration, creative products of pupils, assessment, criteria

Introduction

One of the methods for working with talented pupils in Latvia is through different kinds of competitions. There are many competitions in various school subjects, which are called Olympiads in Latvia (National Centre for Education, 2016). The explanation given by the dictionary compiled by Latvian researchers of the term 'Olympiad' emphasises the demonstration of achievement and competition; that is, the Olympiad is a competitive exhibition in which pupils, students and athletes from particular education institutions and organisations demonstrate their achievement in different school subjects or sports disciplines for comparison on a national or international level (Skujiņa et al., 2000). However, Menon and Vanderburgh (2014), while exploring the model of the architecture competition and analysing the term 'competition', come to the conclusion that this term cannot be understood unambiguously: it can mean both competitiveness and cooperation. The Longman Dictionary of Contemporary English (1995, p. 986) states that in English the term 'Olympiad' is understood as 'a particular occasion of the modern Olympic Games', and therefore the term 'competition' will be used hereafter in the text.

Latvia lacks research on textile craft products made by pupils, including textile craft competitions. Urdziņa-Deruma and Kokina-Lilo (2014) analyses the textile craft products created by pupils for the 10th Open Textile Craft Competition. In fact, there are few studies globally on competitions for textile craft products made by pupils. Thus, this research attempts to analyse the textile craft products created by pupils in a competition in Latvia. The purpose of the research is to explore the results of pupils' creative activity: photos, designs and textile craft products in a competition for textile crafts in Latvia and to find trends of composition types, shape, colour combination, usage of materials, technical solutions and combination of techniques in the creation of textile craft products: hand and foot garments. The study is needed to provide teachers and pupils with a substantiated feedback.

Theoretical foundation for understanding creative products

This study adopts the views of Kenning (2015, p. 451-452) on how 'craft-based textile activities can offer a wide range of innovative possibilities, and have not yet reached their creative

potential'. 'The craft process is regarded both creative and intentional' (Ihatsu, 2002, p. 76). The interaction of the artist's personality and the piece of art (product) takes place in the creative activity (Bebre, 2011).

The creative process is cyclic, nonlinear and enlightenment oriented. It involves connecting to a larger reality and reconfiguring or rediscovering the existing elements. In this way, respecting traditions is not alien to the act of creating because the creative act involves finding new interpretations of the existing elements, giving new breath to old ideas and practices (Lubart, 2010, p. 268).

In the process of creating mental and material culture, such as pieces of art, people pore their knowledge, creative abilities, mental strength and ideal aspirations into it (Anspaks, 2006; Bebre, 2011). Artistic creative activity is cognitively complicated in terms of assessment, as the transformatively creative and communicative components (functions) interact within such creative activity (Anspaks, 2006). The creative activity in art, including within crafts, can have diverse sources of inspiration as the impulse: nature, art, and everyday objects among others (Forsman, 1992; Gentle, 1985; Kinard, 2009; Bebre, 2011). Enduring values—the true and the beautiful and the good and the sacred—run through all spheres of aesthetic and artistic activities (Anspaks, 2006). Kundziņš (2004) points out that in art, the classics devoted a significant part of their work to the study of nature because our sense of beauty arises from objectively existing laws of nature and the biological mechanisms that allow perception, the processing of information and emotional reaction, as well as allowing the creation of qualitatively new information in the form of artistic images.

The creative product is characterised by innovation, originality and public significance (Bebre, 2011). The product can be called creative if it is novel and appropriate to a task that is more heuristic than algorithmic. The product should be assessed in accordance with the context of culture and history (Amabile, 1996), including the social context (Bebre, 2011). Ihatsu (2002, p. 76) stresses the importance of the context in creating craft products, saying that 'making and using crafts is rooted in historical, socio-cultural and psychological conditions, they at the same time reflect both past and present'. Levins (Левин, 1977) suggests that children's creative activity should be viewed separately because, in most cases, it is important only for the particular child engaged in the creative activity.

Bebre (2011) mentions the key creativity criteria for a creative product: novelty (viewed in the social context), usefulness, elegance (aesthetic quality), generalisation and intentionality. Amabile (1996) points out that the assessment of creativity should be separate from the assessment of the quality and aesthetics of the product. Urdziņa-Deruma (2001) finds that creative activity using textile techniques can result in the use of one textile technique, material and approach, a combination of several techniques, a combination of textile materials or various combinations of the means of art; it can lead to the creation of diverse two-dimensional and three-dimensional textile craft products, moving from the initial idea to the preliminary plan and then ending with the final work.

Historical and educational context of textile craft products created by pupils

Latvians have ancient traditions related to the creation of knitted garments, such as mittens and socks, and the ornaments of mittens have been particularly variable, fine and delicate. Fragments of mittens in archaeological findings prove that mittens have existed in the territory of Latvia since the 15th century, and knitting needles have been discovered in excavated layers from the 14th century (Slava, 1992). In a double-colour or multi-colour ornament, the main part of the mittens is made with five knitting needles. Thick socks are knitted in a similar manner. The patterns are arranged in bands and as background ornament or as overall ornament. In some districts of Latvia, both knitted mittens and socks were embroidered. The kinds of stitches used in the mitten cuffs are quite diverse. Such elements as knit-and-purl ribbed patterns,

fringes, picot hems, braids and fir needles have been used in them (Slava, 1992; Grasmane, 2015). Up to the beginning of the 20th century in the Latgale and Augszeme regions of Latvia, ribbon-like mitten cuffs were widespread. They were knitted with two knitting needles, and then the cast on was connected to the cast off, and then from one side the stitches were picked and the mitten was further knitted cylindrically, whereas cuffs made with a braid technique were largely found in the eastern part of Latvia at the end of the 19th century. The triangular shape is the most ancient for casting off (Grasmane, 2015). Nearly a hundred wrist warmers can be found in the collection of the National History Museum of Latvia. One third were knitted using beads (Levinska, 2015). Also, crocheted wrist warmers were made within the territory of Latvia (Vasiļevska, 2014).

Craft is not a separate subject in Latvia, but it is included in the subject of home economics and technologies, and the pupils' creative activity is emphasised by working with different sources of inspiration and with different kinds of material-processing techniques in order to create different kinds of craft products. Starting in Form 5, each pupil chooses to study either textiles or wood and metal technologies (Cabinet of Ministers of the Republic of Latvia, 2014). The knitting of foot and hand garments in the context of Latvian traditional culture was a compulsory part of the school curriculum during the first independent Republic of Latvia in the 1920s and 1930s (Ministry of Education of Latvia, 1925) and during the 1960s to 1980s (Ministry of Education of Latvian Soviet Socialist Republic, 1965, 1973, 1984). Since the restoration of Latvia's independence in 1990, pupils have had the option of learning to knit socks and mittens (Ministry of Education and Science, Republic of Latvia, Education Content and Examination centre, 1998; National Centre for Education, 2005).

Characteristics of the 1st stage tasks and evaluation criteria for the 12th Open Textile Craft Competition: 'Seasons-Autumn'

Twelve open textile craft competitions have been organised in Latvia since 1997. The organisers are lecturers from the University of Latvia together and from the Union of Teachers of Home Economics and Technologies in collaboration with the National Centre for Education and the Education and Information Services of Riga City. Pupils from Forms 6(5)–9, aged 11–16 years, can participate in the competition. The competition consists of two stages. In order to participate in the 1st stage, pupils have to create a design and a textile craft product according to the regulations of the competition. Then, the authors of the most successful works are invited to participate in the 2nd stage at the University of Latvia, where the participants create a design and a corresponding textile craft product or product sample within a time period of 4–5 hours. In this research, the pupil-created textile garments for hands and feet that were submitted for the 1st stage of the 12th Open Textile Craft Competition are analysed and evaluated. The 12th Open Textile Craft Competition, titled 'Seasons-Autumn', took place in Latvia in the school year 2015/2016; the pupils could work on the competition task of the 1st stage from September 2015 until January 21, 2016.

The task of the 1st stage was formulated to the pupils as follows:

1. Choose a theme in nature in the autumn and photograph it
2. Create three designs based on the photo:
 - for wrist warmers, fingerless gloves or gaiters of the pupils' choice (Forms 6–7)
 - for fingerless gloves, socks or mittens at the pupils' choice (Forms 8–9)
3. Make the wearable product using a freely chosen textile technique(s)
4. Add a note that indicates the pupil's name, surname, class, school and the teacher's name and surname; lay out the photo and the designs on A4 format cardboard and add the information about the author on the other side

The tasks in the competition corresponded to the theories about design-oriented craft in a school context (Kröger, 2016) or craft as design and problem solving (Pöllänen, 2009).

After defining the design task, the process encompasses all the phases of the holistic craft process. [...] Sketching can also bring about new associations and ideas. [...] The actual artefact can be realised from various materials and with different textiles or technical work techniques. (Pöllänen, 2009, p. 256).

The task to create three designs was assigned in the competition. Thorsteinsson and Olafsson (2011, p. 161) say that another important issue is that there is a positive motivational effect when children make design decisions, and there is an improvement in their participation in the design project when it is something meaningful to them.

This is why pupils had the option to choose their autumn theme themselves as a source of inspiration for creating the textile craft. They could also choose the kind of textile craft product from the available options. In each age group (Forms 6–7 and Forms 8–9), no more than three participants could take part from each school (The regulations of the 12th open home economics and technologies competition 'Seasons-Autumn' [textile technologies], 2015).

As Barrett (1992, p. 9-10) puts it, 'objective evaluation requires the recognition of external criteria which are relevant for the artefact being appraised to its social and cultural context'. The evaluation of pupils' design and craft products has been researched by many authors. Syrjäläinen and Seitamaa-Hakkarainen (2014) divide sketched models (visual) from operational models (technical) for design representations when exploring the designs and products of 9th Form pupils. The end products are evaluated according to two criteria: functionality and aesthetic quality. Borg (2009) researched evaluation, feedback, and assessment in Sloyd subject in Swedish schools, and she concludes that there is a tendency present, when the teachers prefer to assess the craft techniques, choice of the material and problem solving. The ideas, the aesthetic value of the object and evaluation of the works are avoided. Lindström (2006b) divides the criteria based on the working process (idea, design, realisation and evaluation) and the final product (craft, form, function and utility). In research on visual art, Lindström (2006a) pays attention to such process-evaluation criteria as investigative work, inventiveness, ability to use models and capacity for self-assessment and outlines the criteria for the art product as visibility of the intention, colour, form and composition and craftsmanship (use of materials and techniques). 'In defining criteria of quality, a decision has to be taken on which social contexts and cultures of learning education one should prepare for' (Lindström, 2006b, p. 58).

In the present research, the criteria for the pupils' work process are the photographed themes and their adequacy for the task (a photographed autumn theme), the number (three types) and diversity of designs and the correspondence between the design and the photo and their artistic quality (colour composition and composition unity). The criteria for the end products are based on a previously developed approach to the evaluation of textile craft products (Urdziņa-Deruma, 2001), where the following criteria were put forward: the correspondence of the textile craft product to the task, the applicability of the textile craft product, the artistic value (the composition of the textile craft product, colour combination and material compliance), the originality and the technical quality of the textile craft product. In the process of defining the criteria, it should be possible to evaluate pupils' work in multiple dimensions (Lindström, 2006a). The regulations of the competition provided the evaluation criteria, indicating the number of points to be gained minimally and maximally in each criterion, so they would be clearly understood at the beginning of the work (Table 1).

Method

The research method is to analyse the works created by the pupils in the competition—photos, designs and textile craft products—applying the assessment criteria developed by the author. The social context approach (Amabile, 1996; Bebre, 2011) was applied to identify and assess

the products created by the pupils based on two contexts: 1) the textile craft products of other participants in the competition, and 2) the traditional Latvian cultural heritage.

Characteristics of the sample

The works of all pupils ($N = 238$) that took part in the 1st stage of the 12th Open Textile Craft Competition: 'Seasons-Autumn' in the school year 2015/2016 were analysed: photos ($N_p = 238$), designs ($N_d = 740$) and textile craft products ($N_t = 240$).

The works of pupils from Forms 6–7 ($N_1 = 106$) made one collection: photos ($N_{1p} = 106$), designs ($N_{1d} = 318$) and textile craft products ($N_{1t} = 106$). The pupils from Forms 8–9 ($N_2 = 132$) formed the other collection: photos ($N_{2p} = 132$), designs ($N_{2d} = 415$) and textile craft products ($N_{2t} = 134$). All participants in the competition were girls, and all regions of Latvia were represented. Two pupils from the 5th Form also participated in the group from Forms 6–7. All works were photographed (see examples in Figures 1, 2, 3, 5, 6, 9, 10, 12, 13, 19, and 20).

The evaluation criteria and description of levels

Pupils' works (photo, designs and product) were analysed and evaluated according to the following 12 criteria: the photographed themes and their adequacy to the task, the number and diversity of designs, the correspondence between the design and the photo and their artistic quality, the product correspondence to the given product, the correspondence to one of the designs, the composition of colours, the composition, the compatibility of product material, the creativity, the technical quality, the functionality and the layout.

In order to make the evaluations comparable, each criterion was evaluated with 0, 1 or 2 points. The maximum number of points to be gained was 24, while the minimum was 0. Each criterion had a descriptor (Tables 1 and 2).

All works were dated in an Excel table. For each criterion, the mean (M), variance (VAR), and standard deviation (SD) were calculated for each age group and for all participants together. In order to determine if there was a statistically significant difference between the groups, the Fisher coefficient was calculated (Raščevska & Kristapšone, 2000) from the common evaluations of both collections and in each criterion separately.



Figure 1-2. The photo, designs and gaiters made by Dagne Tuče (Form 6); teacher Rita Siņavska.



Figure 3. The photo, designs and mittens made by Amanda Kristena Jakse (Form 8); teacher Ingrīda Andersone.

Table 1. A three-level description of the photo and design.

Criteria	Value	0	1	2
Photo				
The photographed themes and their adequacy to the task	0–2	The photo does not correspond to the autumn theme.	The photo either partially corresponds to the autumn theme, or was not photographed by the pupil.	The photo fully corresponds to the autumn theme.
Design				
The number and diversity of designs	0–2	No designs.	There are only one or two designs or there are three similar designs.	There are three diverse designs, and different techniques and types of composition are used.
The correspondence between the design and the photo and their artistic quality	0–2	The photo is not used as a source of inspiration, the designs are not expressive and the colours and other means are not coherent.	The photo is used as a source of inspiration in the designs, the designs are negligent, the colours and other means of expression are not matched (or vice versa) or the photo is not used as a source of inspiration but the means of expression match.	The photo is used as a source of inspiration, the designs are expressive, the colours and other means of expression match and the compositions are united.

Table 2. A three-level description of the product and layout evaluation criteria.

Criteria	Value	0	1	2
Product				
Product correspondence to the given product	0–2	The products do not correspond to the task, and there is only one product (rather than a pair).	The products correspond to the task, but there is only one product (rather than a pair), or vice versa.	The products correspond fully to the task, or they are even more complex than required.
The correspondence to one of the designs	0–2	The product does not correspond to the design.	The product partially corresponds to the design.	The product fully corresponds to the design.
Composition of colours	0–2	Only one colour is present.	Colour composition is not harmonised.	Colours are harmonised.
Composition	0–2	Composition is not united.	Composition is partially united. The decoration of the product does not correspond to the form, or the lines and squares are not coordinated.	Composition is united. The decoration of the product corresponds to the form, and lines and squares are coordinated.
Compatibility of product material	0–2	Materials are not harmonised.	Materials are partially harmonised.	Materials are harmonised.
Creativity	0–2	The product is traditional.	There are some creative elements in the product.	The product has a non-traditional form or materials, techniques, colours and other elements of visual expression are creatively combined.
Technical quality	0–2	The product is not of high quality, and technical mistakes are apparent.	The product has average quality: some small technical mistakes are apparent, and elements that should be equal are not of equal size.	The product is of high quality.
Functionality	0–2	The product is not applicable: it is not possible to wear.	Can be used, but problems are present	The product is applicable.
Layout				
Layout of photography, designs and the product	0–2	A note has not been attached according to the regulations, the design on the cardboard is negligent and the product is not blocked.	Designed negligently, or a note has not been attached according to the regulations or the product is not blocked	Designed precisely, put on cardboard, and the notes are attached according to regulations, the product is blocked

In order to be able to analyse the pupils' works descriptively and in percentage, 158 additional columns were made in the Excel table, where the information was included about the themes, techniques, diversity, source of inspiration for the designs, types of products, materials,

techniques and technique elements, the technical solution of the products, the type of composition, the use of colour and the technical quality applied by each pupil (Table 3).

Table 3. Characterisation of the information included in the Excel table and the number columns.

Characterisation of the information included in the columns	Number of columns
Used themes	28
Techniques used in designs	10
Amount and diversity of designs,	3
Source of inspiration usage in designs	3
Types of textile craft products	8
Materials	21
Techniques and technique elements	30
The technical solution of the products	16
The type of composition	12
The use of colour	17
Technical quality	10
Total	158

Research findings

The maximum points in both pupil groups was $x_{max} = 24$ points, which was the maximum number of points; the minimum number of points in the group from Forms 6–7 was $x_{1min} = 13$ points, while the minimum in the group from Forms 8–9 was $x_{2min} = 11$ points. As Figure 4 presents, the most commonly received score for pupils from Forms 6–7 was $M_{10} = 20$, whereas the most commonly received score for pupils from Forms 8–9 was $M_{20} = 21$.

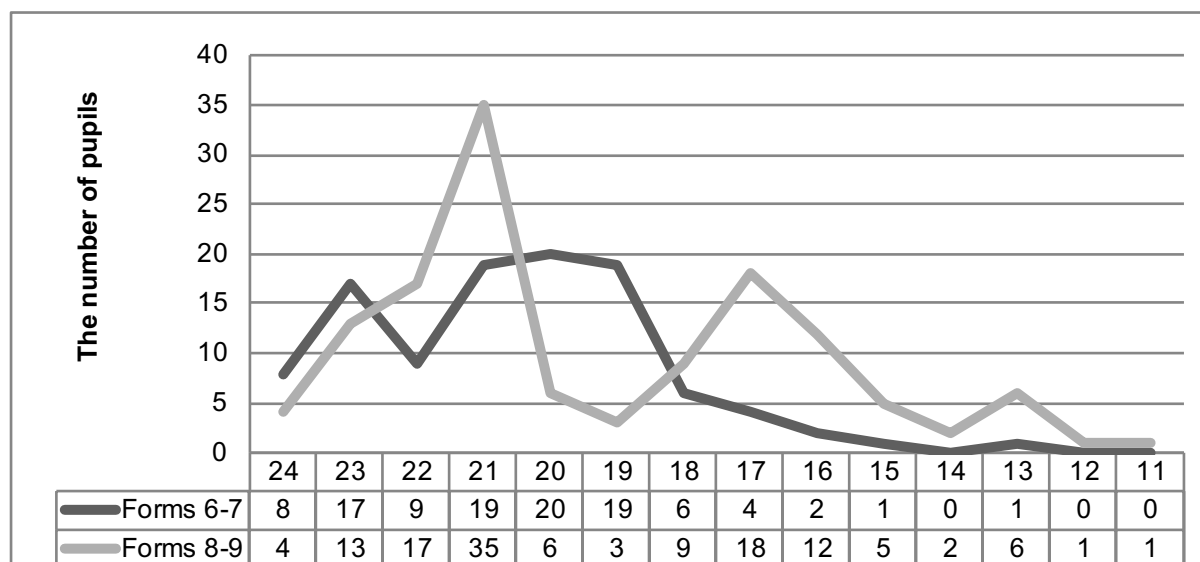


Figure 4. Result polygons of pupil group competition in Forms 6–7 and 8–9.

It was concluded that a statistically significant difference was present between the two groups because the Fisher coefficient was $4.139 \geq 1.39$, $\alpha = 0.05$. There was no statistically significant difference in only three of the criteria: the photographed themes and their adequacy to the task ($F = 1.07$; $1.07 \leq 1.36$), the layout ($F = 1.227$; $1.227 \leq 1.36$) and the composition of colours ($F = 1.215$; $1.215 \leq 1.39$).

The average number of points $M_1 = 20.54$ in the group from Forms 6–7 was higher than in the group from Forms 8–9, where the average number of points was $M_2 = 19.28$. In almost

all criteria, the pupils from Forms 6–7 received a higher average evaluation; the pupils from Forms 8–9 received a higher evaluation only in the following criteria: the photographed themes and their adequacy to the task, the correspondence between the design and the photo and their artistic quality and the product functionality (Table 4). The highest results can be explained by the fact that Forms 8–9 pupils have a greater experience in creating practically applicable products. Lower evaluations in such criteria as ‘technical quality’ and ‘compatibility of product material’ were probably influence by the fact that many Forms 8–9 pupils created more complicated products.

Table 4. The mean (M), variance (VAR) and standard deviation (SD) in every criterion and in all criteria together in the group from Forms 6–7, in the group from Forms 8–9 and in both groups together. Fisher coefficient (F) in every criterion and in all criteria together.

Criteria	Forms 6–7			Forms 8–9			Forms 6–9			F
	M	VAR	SD	M	VAR	SD	M	VAR	SD	
Photography										
The photographed themes and their adequacy to the task	1.89	0.12	0.35	1.92	0.12	0.34	1.91	0.12	0.35	1.07
Design										
The number and diversity of designs	1.4	0.24	0.49	1.27	0.20	0.45	1.33	0.22	0.47	1.464
The correspondence between the design and the photo and their artistic quality	1.06	0.32	0.57	1.14	0.24	0.49	1.10	0.28	0.53	1.777
Product										
Product correspondence to the given product	1.99	0.01	0.1	1.96	0.04	0.19	1.98	0.03	0.16	16,901
The correspondence to one of the designs	1.84	0.21	0.46	1.63	0.27	0.52	1.72	0.25	0.50	1.569
Composition of colours	1.66	0.28	0.53	1.51	0.31	0.56	1.58	0.30	0.55	1.215
Composition	1.82	0.15	0.39	1.52	0.31	0.56	1.66	0.26	0.51	4.428
Compatibility of product material	1.82	0.17	0.41	1.69	0.3	0.54	1.75	0.25	0.5	3.104
Creativity	1.80	0.24	0.49	1.53	0.43	0.66	1.65	0.36	0.60	3.371
Technical quality	1.81	0.17	0.42	1.67	0.22	0.47	1.74	0.20	0.45	1.625
Functionality	1.87	0.14	0.37	1.88	0.11	0.33	1.87	0.12	0.35	1.578
Layout										
Layout of photography, designs and the product	1.58	0.32	0.57	1.55	0.36	0.6	1.57	0.34	0.58	1.209
Total	20.54	4.67	2.16	19.28	9.50	3.08	19.84	7.71	2.78	4.139

The highest evaluation in both groups was in the criteria ‘product correspondence to the given product’ (which can be explained by the fact that only four pupils did not send a pair of products; see Table 4), followed by ‘the photographed themes and their adequacy to the task’ and ‘product functionality’. The lowest evaluation in both groups was in the criteria ‘the number and diversity of designs’ and ‘the correspondence between the design and the photo and their artistic quality’.

It can be concluded that there are higher scores for criteria related to the product, whereas there were lower scores for criteria related to the product design. The biggest result spread in the group from Forms 6–7 was in the following criteria: the layout, the correspondence

between the design and the photo and their artistic quality and the composition of colours. The broadest result spread in the group from Forms 8–9 was in the criterion 'creativity', as there were products that had both a creative shape and a combination of colours, materials and techniques and products that had none of the creative features. This may be explained by the fact that the technical complexity of the product (mittens and socks) was an obstacle to creativity.



Figures 5 and 6. The photo, designs and wrist warmers made by Anna Grickeviča (Form 5); teacher Diāna Platace-Brice.

The smallest result spread in both groups was found in the criterion 'product correspondence to the given product'. In total, a bigger result spread was found in the group from Forms 8–9: $3.08 > 2.16$ (see Table 4).

Characteristics of the photos and designs created by the pupils

Autumn leaves were certainly the most popular autumn theme chosen by pupils, as they were photographed by 39% of the pupils. The most popular were maple leaves, which were used by 17% of the pupils. They were used as appliqué, as well as embroidered, crocheted, felted and knitted (Figures 12 and 13). In addition, 19% of the participants photographed autumn views (Figure 2), 16% photographed trees (Figure 5), 13% photographed berries, and 10% photographed flowers. The pupils also used fruits, animals, mushrooms (Figure 3), vegetables and other plants (Figure 10) as the sources of inspiration. Only 1% did not use an autumn motif as their source of inspiration.

The majority (82%) of the pupils followed the regulations and created three designs, and some (11%) created more than three designs (Table 6). However, 7% of the pupils created only 1 or 2 designs (Table 5). Different kinds of materials and techniques (felt-tip pen, appliqué, pen, crayons, water colour, gouache, correction tape, a graffiti technique of scratching a line on a black-inked surface, Indian ink and computer), but pencils were used most frequently for the designs, as 193 pupils (81%) used pencils. Further, 50% of the pupils used only pencils, while the others combined pencils with other techniques or used pencils in one composition and other techniques to create the other compositions.

The pupils explored both colour and arrangement options of the source of inspiration in their designs: 63% of the pupils used both the colour and form of the inspiration source, while

22% used only the colour and 15% used only the form. In the designs stylisation levels differed, starting with almost realistic depictions of the object to the ornament; 17% of the pupils from Forms 6–7 and 24% of the pupils from Forms 8–9 stylised the source of inspiration in their designs up to a geometrical ornament. Altogether, 21% of the students simplified the source of inspiration up to a geometrical ornament.

The characteristics of pupil-created textile craft products

The most popular product in both age groups were fingerless gloves (41%) because the creation of this product was offered to both age groups. A comparatively small number of pupils (19%) designed products for the feet (Figure 7). Wrist warmers and fingerless gloves were fashionable at the moment, and the products for hands could be shown to others.

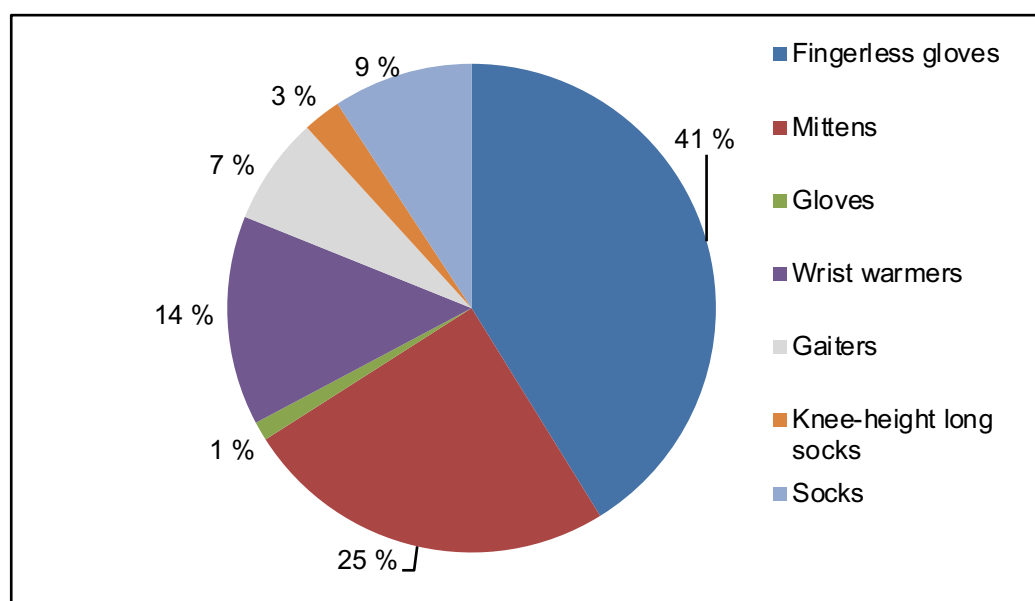


Figure 7. Types of textile craft products produced by pupils in Forms 6–9.

Many pupils from Forms 6–7 (16%) created more complicated products than were offered: 10% of the pupils made mittens, 6% made socks, and 3% of them were the knee-height long socks. Only 2% of pupils from Forms 8–9 made gloves. In addition, two pupils made two different products. One pupil made both wrist warmers and scarf with mittens in one product, while another made mittens and socks. Altogether, 8% made more complicated or more products than was set in the regulations of the competition. Together in both age groups, 3% of the pupils made the easier (wrist warmers or gaiters in Forms 8–9) or fewer products (only one fingerless glove, wrist warmer, kitchen mitten and mitten which could be used as bag) than stated in the regulations of the competition. The compliance of pupils' work with the regulations of the competition is summarised in the following two tables.

Altogether, the works corresponded to the regulations of the competition for the majority of the pupils. In 20% of cases, even more was done than was required, typically with more than three designs provided, though in the pupils from Forms 6–7 the products were sometimes more complicated than required. In 11% of cases, the work was not complete or did not comply with the regulations; typically, there were fewer designs than required.

The majority of the products were made to be worn, fulfilling their heating and decorative functions simultaneously. Some mittens had been made to hold hot objects, and they had been sewn. Applicable works with problems composed 12% in the group from Forms 8–9

and 11% in the group from Forms 6–7. One work in the group from Forms 6–7 was labelled as useless because the creative approach to the form caused problems in terms of its applicability.

Table 5. The number of pupils whose work did not correspond to the requirements.

	Forms 6–7	Forms 8–9
The themes used were not compliant with the photography.	0	3
The number of products was not compliant	2	2
The kind of product was not compliant	0	3
Not enough designs	9	7
Total	11	15
Total %	10%	11%
Total in both age groups	26	
Total % in both age groups	11%	

Table 6. The number of pupils who did more than was required by the regulations.

	Forms 6–7	Forms 8–9
More products than required	0	2
Product was more complicated than required	17	3
More designs than required	11	16
Total	28	21
Total %	27%	16%
Total in both age groups	49	
Total % in both age groups	20%	

Most of the textile craft products (74%) had very high quality, and 88% could be worn with no problem. In contrast, 25.5% of the products were of an average quality, and 0.5% of the products were of poor quality. The most frequently occurring issue was an irregular technique. The thumb in some mittens was too big or too small: in 22 works, the thumb was too narrow, whereas in six cases the thumb was too wide. In some socks, a heel was incorrectly made. The products by pupils from Forms 6–7 were technically of higher quality (Mean = 1.81), as only 1% of pupils received the evaluation 'weak' and 17% received the evaluation 'average', whereas 33% of the works in the group from Forms 8–9 were deemed to have average quality, with the other products being of high quality (Mean = 1.67). One explanation for this could be that the pupils from Forms 8–9 attempted more complicated products.

The characteristics of the techniques and technical solutions applied

Knitting (79% of the pupils) dominates significantly in the choice of the techniques; knitting has been traditionally used for footwear and handwear. This is followed by embroidery (38%) and crocheting (38%), appliqué (29%), felting (21%) and sewing (5%). Some pupils used weaving, braiding, printing or beading techniques, and here the choice of the technique itself can be called creative (Figure 8).

Among pupils from Forms 6–7, 39% used only one technique, while others combined techniques: 30% of pupils combined two techniques, 24% combined three techniques and 6% combined four techniques, whereas only 1% of pupils combined five techniques.

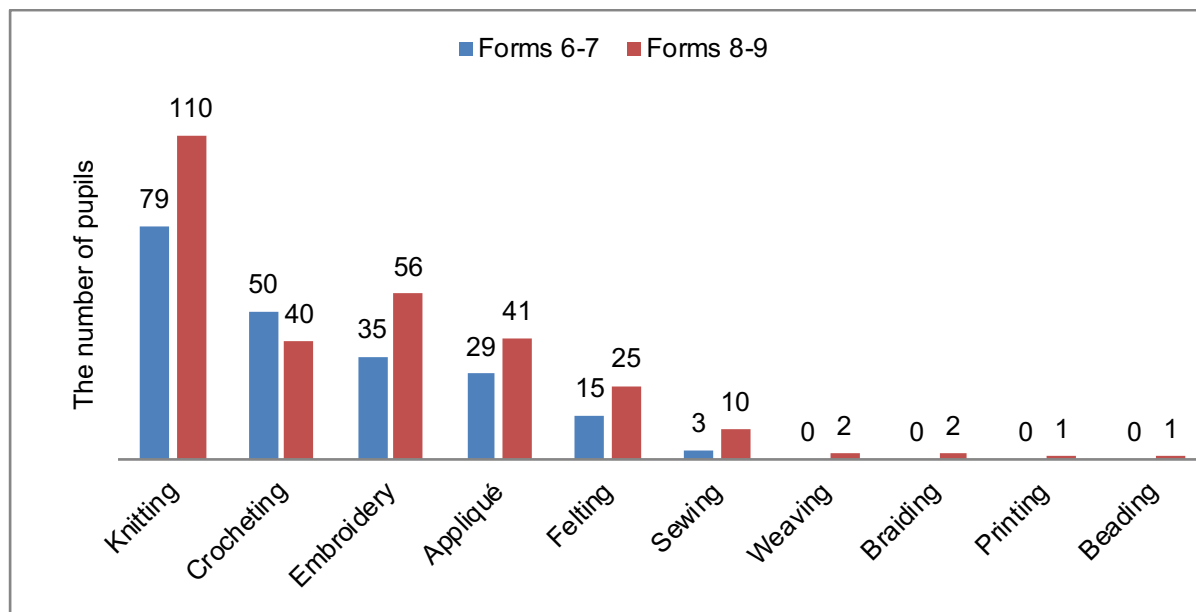


Figure 8. Use of techniques in textile craft products made by Forms 6–9 pupils.

More pupils from Forms 8–9 (in percentage) combined techniques than from Forms 6–7. In Forms 8–9, 29% of the pupils used one technique, which in 31 cases was knitting, while 37% used two techniques, 20% used three techniques, 13% used four techniques and 1% used five techniques. Altogether, 67% of the pupils combined several techniques, and 2.12 techniques was used on average, which shows that creativity was being expressed in the combination of techniques.



Figures 9 and 10. The photo, designs and fingerless gloves made by Marta Sāmīte (Form 6); teacher Ingrīda Andersone.

Knit stitches were the most used elements in pupils' works (75% of the participants), while 63% used purl stitches, 18% used picot hems and 10% used cables, while traditional Latvian knitting elements were also used, such as braids and fir needles (5%), fringes (3%), and knitting with beads in the manner of traditional Latvian wrist warmers (3%).

Some knitting patterns were used only in one work each pattern; for example, one pupil in the cuff part used a Zemgale slanted pattern, another pupil applied a Rucava scalloped cuff, and one pupil knitted mittens using ornamental Latvian patches. Zemgale is one of the regions of Latvia, and Rucava County is located in the south-west part of Latvia.

The type of pupil-made product, such as knitted or crocheted articles, often corresponded to the most popular traditional type of mittens, gloves and socks within the territory in Latvia. They started with a cuff and were knitted in the manner of a circle with five knitting needles or crocheted in a circle (Figure 19). Indeed, 64% of the pupils from both groups chose this manner for making their products, which could not be called creative. Several participants made their products similarly, but they combined 2 techniques; for example, they started with knitting and then continued with crocheting (Figures 1 and 20); 5% of the pupils applied this technique. In one case, a cylinder was felted with both ends crocheted in a circle, thus making fingerless gloves. Other similar fingerless gloves were made of felt with appliqué, which were sewn together, and both were knitted cylindrically.

Products were also made with the ribbon-like technique; traditionally, stitches are cast-on to two needles, knitted with two knitting needles, and then the cast-on side was sewn with the cast-off (Grasmane, 2015). Products were crocheted similarly. Thirteen pupils from Forms 6–7 and two pupils from Forms 8–9 applied such a technique (6% of participants in total). In 5% of all products, the cylindrical and ribbon-like approaches were both applied. In four cases, the product was first knitted or crocheted in a ribbon-like manner, and afterwards, from one or both side edges, the stitches had been picked, and they then continued to knit or crochet in a circle. In addition, 6% of pupils had used an unconventional ribbon-like approach: seven pupils knitted using this technique, afterwards connecting the side edges; in one case, a rectangle was crocheted.

In five cases, wrist warmers were made using a ribbon-like technique, ends not connected, but buttons were attached to make them wearable. In one case, a ribbon was knitted, and after reaching the necessary length, it was knitted farther in the same time to connect it with the previously knitted ribbon.

Six pupils made their products differently: the mittens' (two pupils), socks' (one pupil) or fingerless gloves' (three pupils) cuffs were knitted traditionally on five needles, but the upper and lower sides were then knitted separately and joined together later. In one case, the upper part was made of felt; in another case, the upper part was braided, and the lower part was crocheted. In one case, a rectangle was knitted by continuing to knit cylindrically and making fingerless gloves with splits. Three pupils made their works by combining separate elements (Figure 9), and two pupils made their works by knitting together and extending the stitches. These pupils paid special attention to the technical solution.

Four pupils (2%) crocheted mittens by starting from the vertical middle line part with chain, then crochet on both sides of the chain, increasing stitches in each row at the top of the mitten to make it semi-circular. Sewing was used by 6% of the pupils, including a case where a self-woven fabric was used; 3% of the pupils shaped their products by felting.

Fifty-nine pupils made mittens, and in 46 cases knitting was used as a basic technique, while one pupil used felting, seven pupils used sewing, and five pupils used crocheting. The most popular casting off in knitted mittens was a three-corner cast off (Figure 12), which was used in 40 mitten pairs, while in two mitten pairs the casting off was in four places, in four cases the cast off was in many places. One pupil made double mittens, while another pupil crocheted double mittens.

The heels of 22 sock pairs were knitted traditionally (initially knitted on two needles using lifted stitches, and then the form was made by knitting only the middle stitches and knitting together the side parts), while for five sock pairs different, unconventional types of heel knitting were used. In two cases, the socks themselves were knitted creatively in an unusual way, and for one pair machine knitting was used.

The findings show that traditional Latvian techniques, components and technical solutions were used extensively in creating the shape of mittens, gloves and socks. However, overall, pupils used a wide variety of techniques to arrive at a cylindrical shape. In total, 19% of the pupils' textile craft products can be regarded as creative in terms of the technical solution (Figure 11).

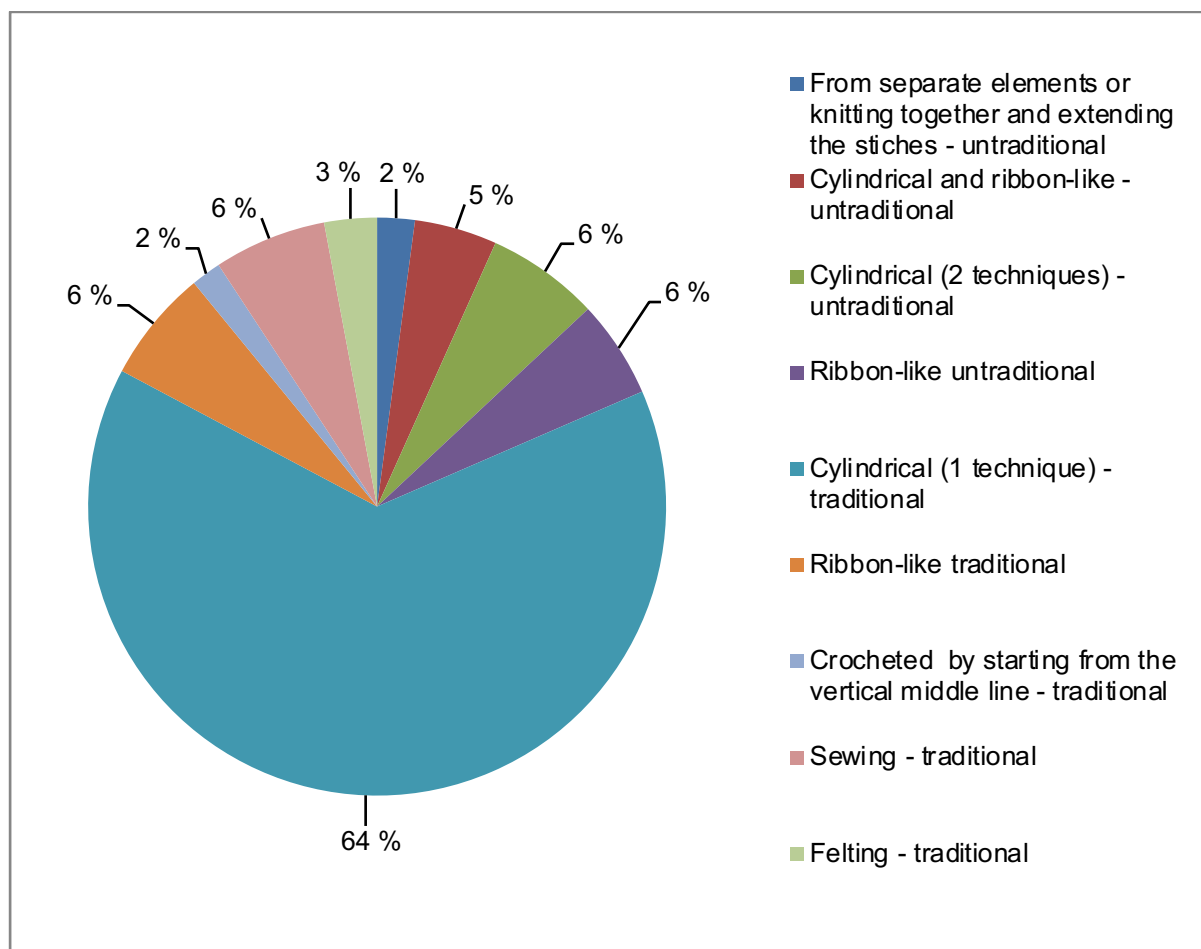


Figure 11. The technical solutions used by pupils from Forms 6–9 for the shape of the product.

Typically, the products, for both hands and feet, were made to form identical pairs; in some cases, however, the right and left sides were different, which serves as evidence of creativity; for example, for one of the fingerless gloves, the emphasis was on a maple leaf motif, while for the other there was a more neutral decoration: small balls, which were stylised apples.

Also, 2% of the products were transformable, which can be considered creative: mittens that could be made into fingerless gloves (Figure 3); long socks, which could be transformed into short socks and gaiters; mittens to which wrist warmers could be attached (Figure 12); and mittens that could be supplemented by a bead string.

Most of the products had a traditional shape. However, in 6% of the works, a shape could be observed; for example, the cuffs of fingerless gloves in the shape of leaves, mittens in the shape of a mushroom (Figure 3), mittens as pumpkins, fingerless glove cuffs in the shape

of carrots, a fingerless glove made of three different sizes of crocheted circles (Figure 9), a fingerless glove and two wrist warmers of unusual shape, and, in two cases, the mittens were made as scarf-mittens. One mitten was made as a bag. However, in three cases, the untraditional form was considered counterproductive in terms of functionality.



Figures 12 and 13. The mittens, wrist warmers, photo and designs made by Anželina Havrova (Form 9); teacher Līga Slica.

The use of material

The choice of material was determined by the chosen techniques. The most popular material used was monochromatic yarn, which is a traditional material, and it was chosen by 83% of the pupils. Altogether, yarn was used by 93% of the participants. The thickness of yarn varied, starting from a very thin yarn for which needles of numbers 1 – 2 were used, up to very thick yarns, where needles of numbers 6 – 7 were used. Next, beads, tie-dyed, melange yarn, wool fibre, felt, and threads for embroidery were used. It can be concluded that beads are popular with the pupils in Latvia. During the 10th competition, 36% of the pupils used beads in the pincushions they created (Urdziņa-Deruma & Kokina-Lilo, 2014).

Comparatively fewer pupils used a sewing technique; therefore, fabrics were used less. Works in which lace, effect yarn, buttons, strings, knitwear, leather and fur were combined with other materials can be considered creative in terms of the material combination because they were used in less than 10 cases (Figure 14).

In terms of material, 46% of the pupils used one kind of material in their products, while the others combined two or more materials. On average, the pupils from Forms 8–9 combined materials more in a product, as their average number of used materials in one textile craft product was 1.90, while for pupils in Forms 6–7 the average number of used materials was 1.72. Overall, 54% of the pupils worked creatively by combining several materials (Figure 15).

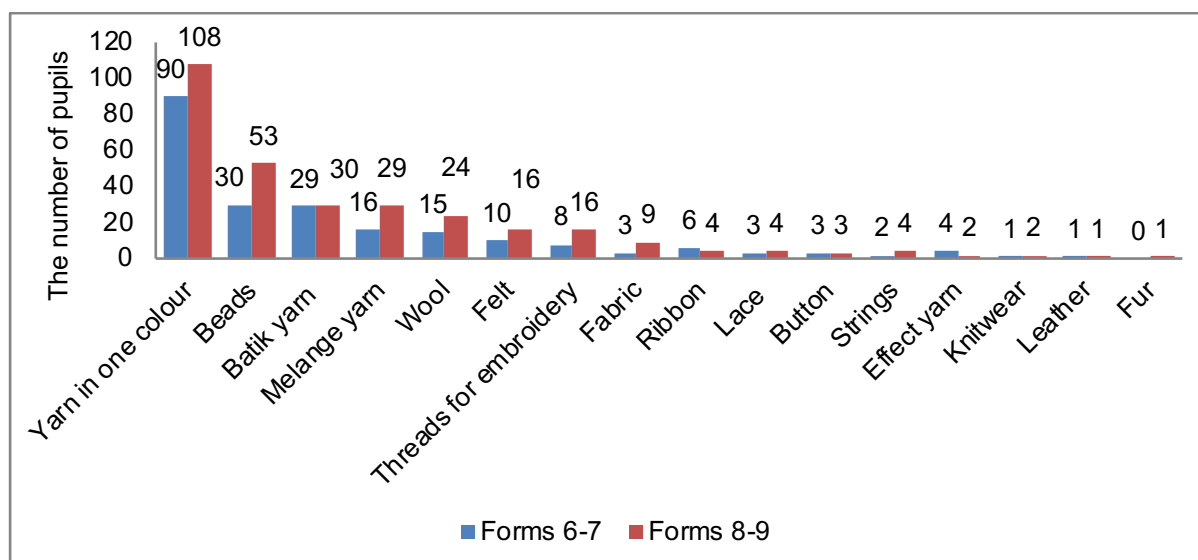


Figure 14. Types of material used in pupils' textile craft products.

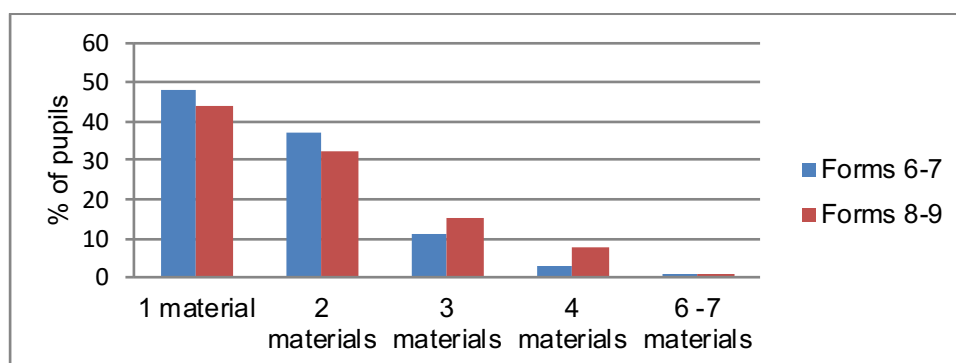


Figure 15. The number of used materials in pupils' textile craft products (% of pupils).

The characteristics of colour combination and composition type.

The majority of textile craft products (98%) were colourful; 5% of pupils used one tie-dyed yarn, while 93% of the pupils combined colours, which testifies to the creative approach to combining colours. Indeed, 30% of the pupils used 10 or more shades in their work. Complementary colour schemes were the most popular in pupils' works (Figures 5, 6, 19, and 20); 52% of the pupils from Forms 6–7 and 46% of the pupils from Forms 8–9 used a combination of complementary colours, with analogues (15% of the pupils from Forms 6–7 and 18% of the pupils from Forms 8–9), tetrads (12% of the pupils from Forms 6–7 and 11% of the pupils from Forms 8–9) and monochromatic colour (9% of the pupils from Forms 6–7 and 13% of the pupils from Forms 8–9) left far behind. The research shows that only some pupils applied the achromatic colour combination scheme, a triad or other colour combination. Only one pupil used a pastel colour combination (Figure 16).

This shows that the pupils were fonder of chromatic colours and colour contrasts. Pupils from Forms 6–7 (69%) used more contrasting colours (complementary colour scheme, triad and tetrad) than pupils from Forms 8–9 (59%). Pupils from Forms 8–9 used 6.72 colours on average, whereas pupils from Forms 6–7 applied 6.25 colours on average. Across both groups, 6.48 colours were used on average, indicating that pupils were especially creative in combining colours.

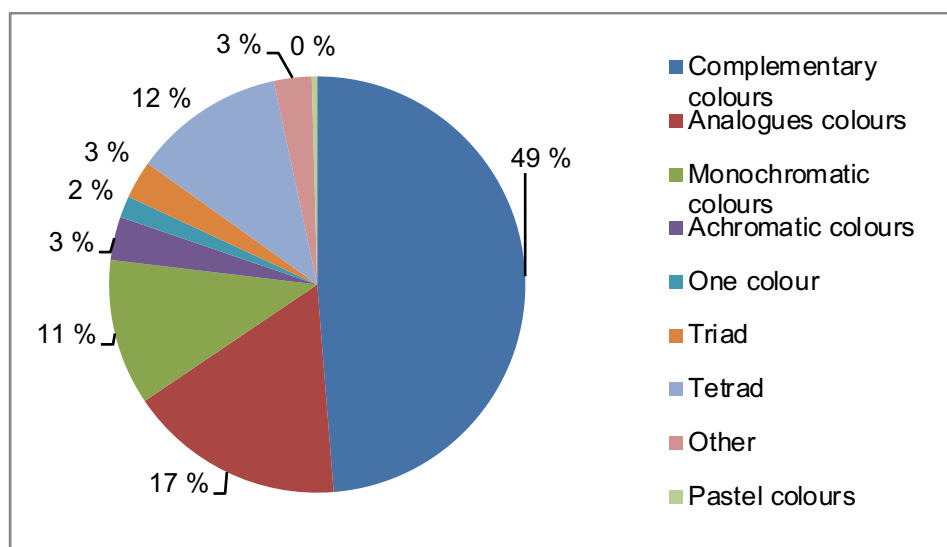


Figure 16. Colour schemes used by pupils from Forms 6–9.

The most popular type of composition was a line composition, which was used in 23% of works (Figures 1 and 2). This was followed by a central composition, which was used in 21% of works (example Figure 20), while a band composition (Figure 19) was used in 15% of works and a free-choice composition was used in 15% of works. In the group from Forms 6–7, a line composition was most used (29%), while a central composition was the most popular (26%) in the group from Forms 8–9 (Figures 17 and 18).

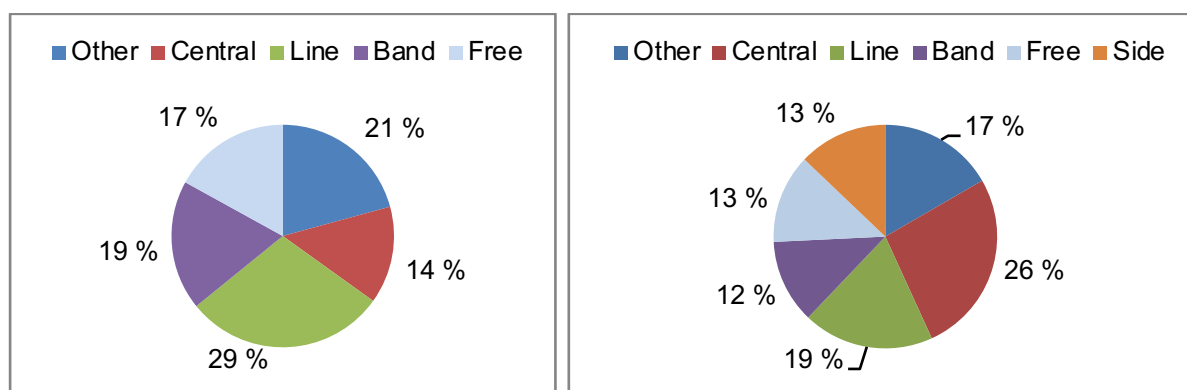


Figure 17. Types of composition used by pupils from Forms 6–7.

Figure 18. Types of composition used by pupils from Forms 8–9.

The use of a specific type of composition was to some extent determined by the most commonly used techniques in pupils' works—knitting and crocheting—and the most frequently used technical solution in designing a product, which was knitting or crocheting in a circle. Yarn of various colours and types can be creatively combined more easily by changing them by rows/lines (Figure 1). Using at least two colours in a row, a band is formed (Figure 19). On the other hand, when applying a design element separately in a product, the central composition is formed (Figure 20). The pupils from Forms 6–7 used line and band compositions more, which can be explained by the fact that pupils from Form 5 have mastered the line composition

according to the recommended programme, while pupils from Forms 7–8 have learned stylisation (National Centre for Education, 2005).



Figure 19. The fingerless gloves made by Agnese Bule (Form 7); teacher Diāna Kaužēna.

Figure 20. The fingerless gloves made by Edīte Meikulāne (Form 8); teacher Liene Upeniece.

Conclusions

The results show that the majority of works created by the pupils who participated in the competition corresponded to the regulations (89%), and the textile craft products were of a good quality (74%) and were usable in everyday life (99.6%). The data, after comparing the works of pupils from Forms 6–7 and the ones from Forms 8–9, showed that pupils from Forms 6–7 were more hardworking because they had more cases where more had been done than was required or where more complicated products had been created than required. In the future, it would be beneficial to study the participants' motivation and how it affected the quality and creativeness of products. The fact that pupils from Forms 6–7 had higher average results can be partially explained by the fact that pupils from Forms 8–9 chose more complicated tasks, and they combined colours, materials and techniques more than pupils from Forms 6–7, which made it more difficult to ensure the quality of the technical performance, material conformity and product composition. It is possible that the complexity of the product also prevented the expression of creativity. The results show that the more materials and techniques applied, the more difficult it was to harmonise them. The fact that the results were higher for the pupils from Forms 8–9 for such criteria as “the photographed themes and their adequacy to the task” and “the correspondence between the design and the photo and their artistic quality” presented evidence that the pupils' sources of inspiration and their use in the design process had a bigger significance in these criteria.

Altogether, there were lower assessments for the criteria related to the design development, which fits with the findings of Syrjäläinen and Seitamaa-Hakkarainen's (2014), who found that pupil-made designs were weaker than the end products. This means that teachers and pupils must work more on the design idea and design development by varying the

techniques and materials in order to facilitate creativity. As the research showed, pencils were typically used for design development, which means that designs were mostly created using the most accessible means.

Pupils' photos show that autumn was mostly associated with leaves, landscapes, trees and berries. The most popular material was yarn, and the most popular technique was knitting. It is possible that the type of product determined the choice of these materials. In comparison, in a similar study in 2014, where the theme of the competition was 'Spring' and the product was a needle pillow, embroidery was the most often applied technique, and craft felt was the most often used material; knitting was used in only 7% of the works (Urdziņa-Deruma & Kokina-Lilo, 2014). Knitting was likely the most used technique because, traditionally, hand and foot garments have been knitted in Latvia. The majority of pupils used techniques such as knitting, crocheting, embroidery and appliqué, which were stated in the subject standard and mentioned in the recommended subject syllabus. The results also confirm that felting has recently become popular despite not being included as a mandatory part of the subject. Sewing was relatively little used, although it is still a compulsory part of the subject; this can be explained by the lack of sewing machines in schools.

The pupils were better at using complementary colour schemes, and they preferred chromatic colours to achromatic ones. The types of composition that were most often used were line and central composition. Such a choice could be determined by the applied techniques: it is easier to knit and crochet lines rather than colour squares or bands in cylindrical articles, whereas in the case of using an appliqué technique as an addition, it is easiest to adopt a central composition when one element is applied. Pupils combined colours in their works mostly followed by techniques and materials. In cases where there was a free choice regarding the products, the pupils tended to choose the crafts that were fashionable and that could be demonstrated to others when they wore them.

While pupils used the nature theme in autumn as a source of inspiration, the impact of traditional Latvian knitting could be felt in the shape, applied techniques, materials and decoration of the pupil-made products. The traditional cylindrical manner of mitten, glove and sock knitting was applied using five knitting needles, starting with the cuff, and traditional elements were: notches, fringes, braids, fir needles and cuff types. As typical of Latvians, the triangular casting off was applied in the mittens, the heel kind in the socks, as well as a common shape of mittens and socks appear in the biggest part of the knitted mittens and socks by pupils. In several works, the source of inspiration was stylised in a geometrical manner typical of traditional Latvian crafts.

Creativity predominantly manifested in the combinations of colours, techniques and materials and in the technology solutions, while a creative product shape and the use of untraditional materials was used to a lesser extent. This type of craft assignment develops pupils' observation skills, perception of colours and shapes and figurative, spatial, logical, creative and critical thinking. Altogether, the competition, in which the pupils had to use a concrete source of inspiration, is a way to promote the development and popularity of the textile craft as well as to use traditional cultural heritage in a creative manner.

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