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# 12 Analyzing domains of learning for crosscurricular teaching

## Educational crafts in focus

*Juha Hartvik and Mia Porko-Hudd*

### Introduction

Crafting can be described as man's ability to use tools to process materials into artifacts and thereby change living conditions (Alexandersson, 2007; Säljö, 2021). When looking at the Nordic countries, craft is found in both educational and noneducational settings (Nygren-Landgärds, 2003). In Finland, *craft* (fi. Käsityö, swe. Slöjd) has been a compulsory school subject for all pupils in basic education since 1866 (Nurmi, 1979). The English name of the Finnish school subject is also translated as *craft, design, and technology education* in global connections (Lepistö & Lindfors, 2015). This translation shows the wide meaning and content of the subject. The craft subject has clear similarities with school subjects in the Anglo-Saxon world that are classified under *technology education*, as well as *design and technology* (see Atkinson, 2023; Benenson & Piggott, 2002).

Craft involves investigative, creative, and experimental work, as well as choosing various materials, technical solutions, and methods of production (Finnish National Agency for Education, 2014). Craft consists of a vast variety of materials and techniques, such as wood, metal, plastic, and electronic work, as well as sewing, knitting, crocheting, weaving, embroidery, textile printing, and felting. The subject's multimaterial content has changed over time, and today, programming, robotics, and 3D printing can also be included. Teachers enjoy significant autonomy in shaping the subject content, which means that the content can vary greatly between schools (Lapinoja & Heikkinen, 2006).

Craft is expected to promote diverse learning and lead to socially desired outcomes in the learner. These requirements are set out in governing documents, such as curriculum foundations. Society becomes a central agent that places demands and expectations on the activities that take place in school. The learners' involvement in multimaterial holistic craft processes forms the basis for the existence of the school subject. Holistic craft processes include idea creation and the development of ideas, planning, and preparation for making, as well as the concrete making of the artifact. During all stages of this iterative craft process, self-evaluation and evaluation, together with others, are included (Pöllänen, 2009; Porko-Hudd et al., 2018).

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In the general everyday discussion, craft is often labeled primarily as a carrier of the knowledge form *Techn*e (Aristotle & Brown, Book VI, 2009), which is knowledge that aims at the productive and effective "doing" in the world. Every so often, the craft subject's relevance for modern man is questioned (Johansson & Porko-Hudd, 2011). The artifact sometimes overshadows the more abstract learning of the process (Borg, 2009). This means that craft teachers and researchers need to justify and clarify the subject's diverse knowledge contribution to man and society (Hasselskog et al., 2018). Looking at definitions of Techne, Episteme, and Phronesis as forms of knowledge (Aristotle & Brown, Book VI, 2009; Gustavsson, 2004; Parry, 2021), the processes in educational craft can contribute to knowledge formation about how the world and society are structured and function and thereby actively take part in and develop them. Therefore, we also wish to emphasize that teachers in crafts need to adopt a broad view of the potential of the subject in itself and as part of crosscurricular teaching. We will elaborate on the domains of knowledge in crafts further on in this chapter.

In the conclusion of Chapter 3, it is highlighted that Bildung is a viable concept that can broaden the vision of the general education school's mission. At the same time, the authors of Chapter 3 call for a more detailed picture of what and how individual subjects and subjects together in crosscurricular teaching can contribute to the Bildung of the learner. In this chapter, we initially present two different models for learning in aesthetic subjects such as crafts. The first model was developed by Lindström (2012) and the second one by Huovila and Rautio (2008). By analyzing similarities and differences between the two models, a new model emerges. The new model is discussed by analyzing learning domains in a craft case. The aim of the developed model is to give both the individual teacher and teaching team that plans crosscurricular teaching a tool to systematically use and make visible learning and contributions to Bildung that crafts alone and crafts together with other subjects can enhance and lead to.

## One model for learning in crafts

Over time, different theoretical models and terminology have been created to capture the breadth of learning. Concepts such as material and intangible learning, practical utility, and general knowledge, which focus on product and/or process, are included when learning is discussed. In the first model, Lindström (2012) defined learning in practical-aesthetic subjects, for example, arts and crafts, in terms of a conceptual framework consisting of a fourfold table in which each quarter stands for a separate form of learning: learning *about*, *in*, *with*, and *through* crafts (see Figure 12.1). The learning forms are not hierarchical, and they can flow and merge into each other in several ways. The two rows stand for medium-specific and medium-neutral learning, while the two columns stand for convergent and divergent learning.

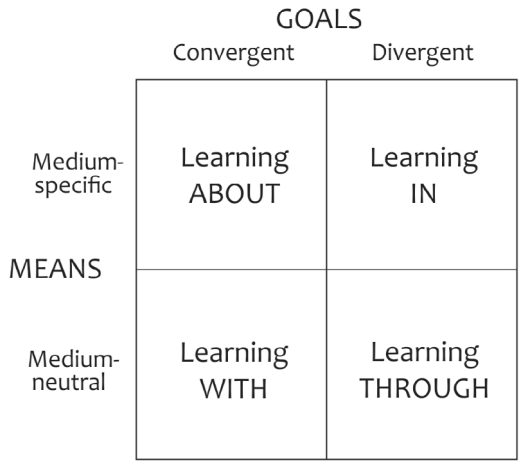


*Figure 12.1* Four ways of learning in crafts (developed from Lindström, 2012).

The upper row in Lindström's model (2012) focuses on medium-specific learning within the subject at hand, in this case crafts. Learning is divided into convergent learning (about), where the goal is to achieve something that is stated in advance, and divergent learning (in), where the goal is to combine what one already knows in new ways. In crafts, the first quarter, learning *about*, refers to the mastery of domain-specific skills and working methods, as well as knowledge about materials, tools, and vocabulary. Within this quarter, crafting often takes a reproducing form (Sjöberg, 2009). In the second quarter, learning *in*, the learner applies domain-specific knowledge and skills in creative and innovative ways. Crafting in this quarter can be defined as innovative and reorganizing (Sjöberg, 2009).

The lower row in Lindström's model (2012) focuses on medium-neutral learning within the subject at hand. Learning is further divided into convergent learning (with) and divergent learning (through). In Lindström's model, learning *with* refers to the integration of the subject at hand with the subject matter from other subjects or disciplines. According to Hasselskog (2010), learning *with* crafts can refer to an integration of craft skills and something noncraft-specific. For example, the learner can make a piece of clothing that will be used to portray a character in a play performed in or outside school. To achieve this, the learners use their specific craft skills, such as constructing a pattern and handling the sewing machine. Additionally, Lindh (2022) stated that learning *with* is used in school when art is planned and integrated with other subjects to be used as aids, support, or illustration. However, there is the risk that an excessive focus on such subject-neutral use overlooks the subject's full educational potential (see Marner & Örtegren, 2003). Learning *through* refers

to the approaches and overall competences, as well as the all-round development that one can acquire through deep engagement in practical-aesthetic projects. According to Hasselskog (2010), when learning *through*, the focus is on the personal development of the learner. By challenging and drawing the learner's attention to the role of the ongoing craft work in a larger context, the learner's reflection and awareness of overall competences may be achieved.

When summarizing the contribution of Lindström's model to the development of a new model for analyzing the domains of learning for crosscurricular teaching, we focus on the division and virtual horizontal line between medium-specific and medium-neutral learning. From this model, we also take with us the idea that, in all school subjects, there are medium-specific and medium-neutral content and objectives.

## A second model for learning in crafts

The second model for learning in crafts that we find interesting here is developed by teacher educators and craft teachers Huovila and Rautio (2008). They identified a need to create a theoretical tool that supports teachers in planning a timely and diverse form of teaching and learning in crafts. A further motive for the development of the model is the historical division of the craft subject in Finland into two different material areas related to gender: one focusing on textile craft for girls and the other focusing on technical craft for boys. The two material areas have been taught by two different subject teachers, often a female teacher in textile craft and a male teacher in technical craft (Lepistö & Lindfors, 2015). For several years, the process of considering the multimaterial content in craft as the learner's right, regardless of historical traditions or gender, has been topical. When planning teaching and deciding on didactic approaches, the teacher is assumed to have an overarching and diverse view of the qualities that can be achieved in crafts teaching, regardless of which materials and techniques are actualized. An additional motive for the development of the model is to make visible the holistic craft process, from idea creation to planning, executing, and evaluating. All of these steps need to be included in the path to a concrete artifact and versatile learning embedded in them. The model can also be used to communicate content and expected learning in dialogue between the teacher and learners. The model by Huovila and Rautio consists of four quarters (see Figure 12.2).

The first quarter, in the upper left-hand corner, focuses on knowledge and skills in craft. Here, the importance of learning about materials, tools, and procedures is highlighted. This is where teachers have found it easiest to formulate goals for learning and where learning has been the easiest to follow and verify. Compared with Lindström's model, the goals for learning in relation to this quarter are similar to what he called learning *about* crafts. In a situation in which the multimaterial craft subject is made available to all learners, teachers need to see the breadth of the subject and be prepared for collegial collaboration.

| | GOALS | GOALS | |
|---|---|---|---|
| EVALUATION | knowledge and skills about craft | design and planning skills in craft | EVALUATION |
| EVALUATION | working skills in craft | personal growth skills | EVALUATION |
| | GOALS | GOALS | |

*Figure 12.2* Four fields of learning in crafts (developed after Huovila & Rautio, 2008).

The second quarter, in the upper right-hand corner, has goals related to planning. The authors mentioned aesthetic and technical planning. Considering holistic processes, we want to emphasize that planning needs to be concerned with both parts and larger wholes, for example, steps in the manufacturing and realization of ideas. At the same time, planning ability also needs to be practiced so that it is open to change when its realization is underway.

In the lower left-hand quarter, Huovila and Rautio emphasize objectives that relate to the manual, visible, and tangible aspects of craft. The craft subject is one of the few school subjects, in addition to physical activity (see Chapter 7), where learning connects to bodily processes. The results of work accumulate "layer upon layer" in an emerging, tangible artifact. If the work is not done, the product's growth stops. This type of activity provides excellent opportunities to focus on goals such as work readiness, endurance, problem-solving, and responsibility. When looking at the two quarters related to planning and working, craft as a process consisting of different phases is clearly visible in Huovila and Rautio's model, while the learning potential within the planning and execution of a craft work is not articulated in Lindström's model.

Finally, the lower right-hand quarter in Huovila and Rautio's model focuses on aspects of learning concerned with the development of personal and social qualities, as emphasized by the notion of Bildung. The learner becomes part of the surrounding society, its culture, history, and future. In crafts, the learner is, for example, guided by the principle of sustainable development to bear responsibility for consumption and the environment. Learning goals can focus on an appreciation of work quality and craft material, thereby increasing a sense of responsibility for them. Craft is seen as an activity in which the learners experience joy and satisfaction from the work and where their

self-esteem grows (see Chapter 3). Learners also develop their readiness to make conscious choices among available possibilities. This quarter in Huovila and Rautio's model has many similarities with Lindström's fourth quarter – learning through.

When summarizing the contribution of Huovila and Rautio's model for the development of a new model, we focus on the indirectly discerned process that is included in craft activity. The process's presence is revealed in learning objectives focusing on planning and targeted work activities.

## A developed model emerges

The two models presented here have not only clear similarities but also exciting differences. Lindström's model can be described as more static; in a positive sense, it discusses the main types of learning that can come out of practical-aesthetic learning processes. Huovila and Rautio's model, in turn, has a more subtle emphasis on process. The model gives way for the process that takes place, or is expected to take place, when crafts are part of general education. Both models give clear visibility partly because craft is used as a goal in educational activities, but above all, craft is used to achieve development that exists outside the concrete craft activity. Therefore, they provide an opportunity to be combined, giving a foundation to shape a new model to support thinking about a wide spectrum of possible learning when both regular and crosscurricular teaching are planned.

From the two existing models, we take over four aspects that we integrate in our new, developed model. The first fundamental aspect that creates clarity in the new model is the division into medium-specific and medium-neutral areas for learning. The second aspect deals with the fact that one of the quarters in both models clearly focuses on basic skills and knowledge within crafts and, thus, is clearly medium-specific. The third aspect is the clearly medium-neutral quarter in both models. The fourth aspect is the idea of process thinking visible in Huovila and Rautio's model. Thus, the developed model consists of four domains of learning: (1) *knowledge and skills for planning*, (2) *unique subject content*, (3) *targeted work and activity*, and (4) *diverse competences, abilities, and attitudes derived from the subject* (see Figure 12.3).

By visually placing the domains overlapping the horizontal line, we show the dynamic changeability that learning content per se is not necessarily limited to either medium-specific or medium-neutral areas. Three of the domains in the model span both medium-specific and medium-neutral areas of learning, while one is clearly limited to the medium-neutral area. How large the overlaps between the areas are has to do with a series of aspects that influence and are present in situations where materials are transformed into artifacts and learning.

In addition to the four aspects that we take with us from the two models described earlier, we highlight the concept of Bildung as a new, clarified contribution when the domains of learning in crafts are analyzed and discussed.

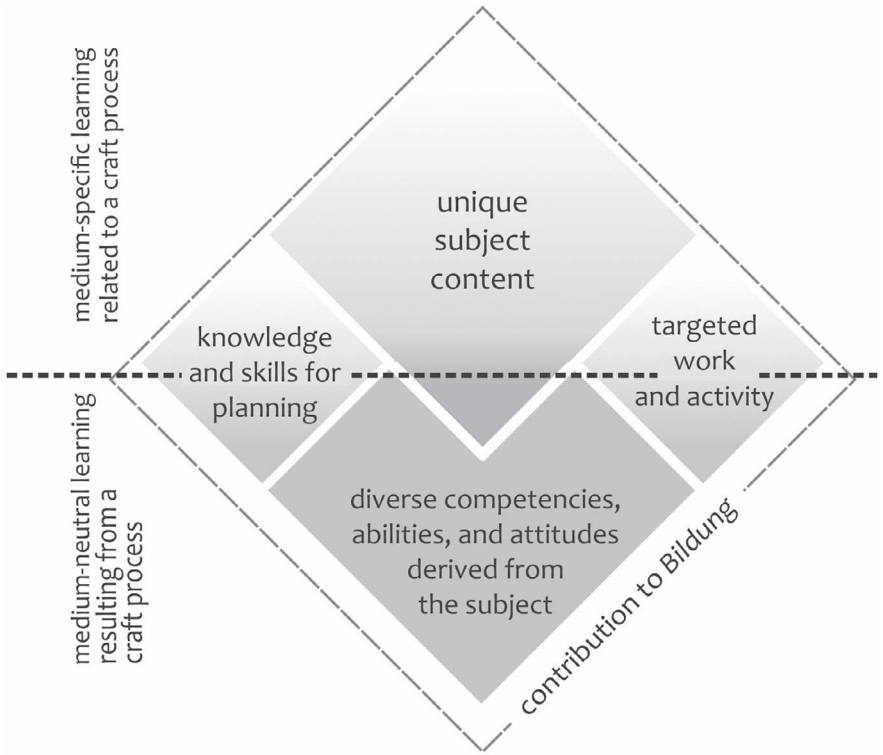


*Figure 12.3* Domains of learning in educational crafts.

In the scope of school subjects with different knowledge contributions to the learner's life management, craft contains domains of learning that would otherwise be difficult to obtain. Thus, *contributions to Bildung* frame all domains of learning in educational crafts. Especially in democratic societies, there is a strong desire for general education to develop individuals' ability to manage their lives in a responsible way. Ambition always goes hand in hand with the idea that the individual should handle the situation with others and continuously consider the world in which we live.

To open the many folded competences needed in crafting, we next describe a case. The idea here is to highlight the complexity that exists when a person chooses or is expected to take on a crafting process. In addition to discussing the versatility of a craft area familiar to us, we encourage teachers of other subjects to analyze their subject content similarly. This analysis helps the individual teacher recognize the possibilities of one's own subject in a cross-curricular context. This process is also about opening one's subject to other teachers, thus favoring the planning and executing of crosscurricular collaboration and teaching. In an educational context, there is always an interplay

between teaching and learning. Some form of teaching activity is often needed for the identified learning potential to be reached.

## An analysis of the learning potential in a craft project: the case of knitting a pair of socks

The starting, focus, and goals of a craft project can vary, especially in educational settings. The presented case has no ambition of showing all the knowledge and skills that are activated and developed. A similar discussion can be conducted in relation to all conceivable materials and technologies within crafts. In the same way, potential teaching and learning content will be affected by, for example, didactic choices. The learner's current knowledge, skills, and possible next level of ability also affect how the domains found in the developed model are emphasized and appear in the learning process.

When taking on the task of knitting a pair of socks, a great variety of knowledge and skills is needed. The task has endless variations and alternatives. To begin with, the crafter needs to decide for whom the socks are being made, what size they need to be, and what kind of socks one wants to knit: baby socks, woolen socks to be used in boots, summer socks with lace patterns, or some other kind of socks? Another decision is whether to follow a pattern made by someone else or if one wants to make a pattern on one's own. Here, existing possibilities need to be related to one's own abilities. When using a pattern made by someone else, technological literacy is required to analyze whether the degree of difficulty of the pattern is suitable for one's ability. Furthermore, the crafter needs technological literacy to interpret the pattern in text, abbreviations, and symbols. If a pattern is used, the crafter needs knowledge and understanding of the possibilities and limitations of the craft technique, in this case knitting. The crafter also needs to make choices about suitable yarn material, thickness, color, price, availability, and sustainability. All these decisions are influenced by whether one works alone or has access to supervision during the process. All of these decisions are within the domain of knowledge and skills for planning.

The discussion about starting a craft project highlights the strong connection between knowledge and skills for planning and *unique subject content*. The crafter needs to acquire the basics of how to perform a technique and, step by step, develop the execution. Questions such as what kind and amount of yarn, what size, length, and number of knitting needles, and what pattern is most suitable appear and need to be decided upon. Questions related to the material aspects of craftsmanship are extended to consider the bodily performance that belongs to the current technology and is needed when the material is to be transformed into an artifact. For example, when starting the knitting project and casting on the first stitches, the crafter needs to train finger and hand movements that lead to a correct, functional, and aesthetically desirable result.

When the crafter has made the basic choices described earlier and acquired the required bodily skills, as well as understanding and readiness to practice the craft technique at hand, new skills, knowledge, and decisions are awakened. In this case, choices need to be made concerning how to knit the leg of the sock, what kind of heel one wishes to knit, and how the foot and toe of the sock are knitted to achieve the desired result. Also, no sock knits itself. The next domain that is inevitable in the transformation from material, such as a ball of yarn, to an artifact, in this case a pair of socks, consists of *targeted work and activity*, which is a constant commute between thinking and performing. The more experience the crafter has, the more automated the work phase, or parts of it, will be. The technical performance develops for each stitch, and the knitted surface becomes more even. At the same time, the crafter's resources are freed to think beyond what is most necessary in the "think–do" process. Problems of different kinds that need to be solved may also occur during the process.

In targeted work and activity, the crafter can constantly revise the original plan for the artifact and the process regarding, for example, degree of difficulty, technical execution, and aesthetic choices. This procedure is governed by several factors, which can range from the skill level of the crafter to changing needs and available time limits. As mentioned earlier, no artifact makes itself. A goal-oriented and persistent action from the crafter is needed. Persistence is continuously rewarded when each completed submoment immediately becomes visible in the emerging artifact. Gratification from solving a difficult task is also discussed in Chapter 3. Each stitch builds on the earlier, and thousands of them formed over several hours to finally make up a complete sock that can be evaluated and used. When the first sock is finished, the crafter needs to start the making process all over again to make a sock of the same size for the other foot.

In the presentation of this case, we have so far focused on medium-specific work actions and learning opportunities. Next, we will reflect on some of the medium-neutral learning opportunities. Regarding knowledge and skills for planning, we claim that the skills acquired in craft processes, such as knitting a pair of socks, can also promote planning skills in other situations. Skills, such as creativity, visual, and technical planning, predictability of working order, and awareness that different approaches can lead to the same desired result, are also useful when life management in general is in focus. Also, overall multifaceted problem-solving and decisions that resonate around the available time, financial resources, aesthetics, and functionality in the artifact's use are important medium-neutral competences. We claim that the choices one makes in the medium-specific area contribute to practicing one's ability to making both concrete and more abstract planning choices in a medium-neutral area. In educational settings, the opportunity to make choices has the function of training, aiming to broaden and deepen the crafter's ability for decision-making. The ability to make choices depends on many factors, such as the crafter's earlier experience and the motive–result ideal (Lindfors, 1999) given the process at hand.

The unique subject content of the case presented earlier shows the advanced knowledge and skills that are needed and developed when a low-technology craft activity, such as knitting, is practiced and a seemingly basic artifact takes shape. The path from novice to expert involves the training of various knowledge bundles. Motoric skills are practiced and refined. The hand – eye coordination and the interaction between artifact and crafter is trained, refined, and even automated. We believe that these knowledge and skills are not limited to the medium-specific area alone, but become generic abilities that the individual can use and further develop in medium-neutral areas outside craft.

In educational settings, the crafter's versatile encounters with materials and tools can contribute to knowledge in, for example, the various subareas of sustainable development and conscious choices based on them, technological literacy in connection with both the work at hand and also, in a broader perspective, awareness of life cycle thinking in relation to products. Cultural awareness can be achieved by relating the present and future to the history of which we are a part. Also, reasoning around aesthetics, economy, ecology, and technology can be made concrete and realistic for the learner. In these relatively large and intangible fields, one should also value the crafter's constant counting, memorizing, keeping track of different parts of the whole, taking notes, comparing, and assessing the product and/or process both individually and with others. Even though the contents listed here are practiced within a concrete crafting process, they can easily transfer to medium-neutral areas that strengthen a person's general knowledge and skills.

The third part of the described case is concerned with the manual and observable work process needed when material is transformed and made into an artifact. The completion of tasks always requires purposeful activity and work. In crafts, purposeful intellectual work is combined with purposeful manual work and intertwined into a chain of events expected to lead to knowledge and skills expressed and stored in a tangible artifact. At the same time, working methods in crafts can be seen as rewarding. Each oscillation between thought and action leads to an immediately observable visual and material change in the emerging artifact. The change is most often relevant and desired, but often it can also be unexpected and unwanted. This calls for the crafter's perseverance, confidence in one's own skills, and the ability to constantly evaluate the emerging artifact and revise the ongoing process. Because learning is embedded in the process of making, persistent work from the crafter is needed.

The last domain in Figure 12.3 deals with the crafter's development of *diverse competences*, *abilities*, and *attitudes* derived from the craft subject. When knitting, the crafter needs to make several choices and make different decisions. When the work progresses, one's ability to critically follow the development of the work becomes involved, and sometimes one ends up going backward in the process. Not only perseverance, problem-solving, and the ability to take setbacks, but also the joy of succeeding, are steps on the path toward the finished artifact. A unique aspect of the craft's productive nature is that the tangible artifact can be given to someone else. This can be decided

at the beginning of the process, or it can be arrived at as the work develops. Empathy in the form of bringing happiness and wellbeing to others can affect both the artifact and the person who makes it. We also need to be aware that crafting and all the good that is pursued in the process can lead to feelings of ignorance, questions about what one has or has not learned, and even feelings of failure. Craft is a process in which both success and failure are very tangible. Self-reflection and sane criticism of one's own work helps one develop so that "reflection in" and "reflection on" (Schön, 1983) the process can be supplemented with forward-looking "reflection for" (McAlpine et al., 1991) when similar projects are to be taken on in the future.

The overall goal of a general education school is to develop the learner's capacity to manage their life situation in a positive and constructive way. Through the description of the domains of learning and analysis of a craft case, we argue that craft can contribute to questions about how the world is – epistemic knowledge – what one can do in the world – technical knowledge – and what one ought to do in the world – ethical knowledge (see Chapter 4).

Although we have discussed the possibilities for diverse learning through a case within a specific subject, we are also aware of the importance of the general education school being diverse as a whole. The different subjects' domains of learning vary and contribute to a person's Bildung. Ellen Key coined the classic statement that Bildung is what remains when we have forgotten everything we have learned. With reference to Key (n.d.), we regard it important that a learner in school receives diverse impulses so that the knowledge, skills, and attitudes one can forget – and possibly later reactivate – are as wide and deep as possible. In other words, everything that happens within a craft process and the learning that takes place in it *contribute to Bildung*. Next, we focus on the teachers' collegial work with the goal of shaping crosscurricular teaching.

## Contribution to Bildung as a shared responsibility for crosscurricular teaching

As noted in Chapter 2, there is a need to think about crosscurricular teaching from the point of view of the school, teachers, and learners. In addition to Bildung, we also see empowerment (Suojanen, 1999; Zimmerman, 1995) and autonomy as central concepts. Empowerment can be seen as the active component of the process in which Bildung and autonomy are included. Bildung concerns all the powers of an individual, and autonomy refers to the possibility to operate in an individual and a collegial arena (see Chapter 3). Empowerment is the ability that enables someone to act self-confidently in a certain area. While the discussion concerns schools in democratic societies, these three concepts are present and need to constantly be refined for both the learner and the teacher.

Unlike teacher autonomy understood as isolation and reluctance to change (Lortie, 1975), autonomy is here emphasized in light of Allwright's

definition (cited in Little, 1995) as "a constantly changing but at any time optimal state of equilibrium between maximal self-development and human interdependence." Lapinoja and Heikkinen (2006) discussed teacher autonomy with support in Kant and Habermas and outlined a "mechanism" in which individual autonomy precedes public autonomy. The train of thought here is that the teacher needs to engage in a reasonable dialogue in relation to something that "is." By taking a stand for what "is," an individual position or individual autonomy is created. In a public arena, individual stands meet to open, discuss, and argue with the aim of arriving at a collective understanding of the currently prevailing view of the "good" and how to jointly achieve it. It is about having a picture of "what is?" What "can and needs to be done?" What is "ethically defensible and the right thing to do?" We regard the process of analyzing domains of learning in one's own subject as the creation of an awareness of the subject one is familiar with. With this individual autonomy, the teacher then enters into a collegial discussion of crosscurricular teaching in a public autonomy arena. In the context where teaching in specific subjects and crosscurricular activities is planned and carried out, individual autonomy needs to be framed by the reality that is and the expectations that society places on the school (see Chapter 3). Human interdependence is interpreted here as dependence and respect for the school's collegium and society's expectations of what happens in the school.

When planning crosscurricular teaching, it is important to be aware that subjects' backgrounds, working methods, and interest in knowledge differ. The subjects in school are based on academic subjects, but the form they take can have different relationships with the background sciences (see Englund & Svingby, 1986). A school subject may be a simplification of an established field of study and academic tradition, but it may also have sources of knowledge other than science. Hence, their contribution to Bildung differs. In the case of crafts, it became a school subject long before there was established research in the field (Lindfors, 1991). Society, including its traditions and needs, strongly influenced the design of the subject (Hartman, 2021). Later, research in crafts and the development of scientific disciplines within the area at universities in Finland (Government Decree, 2017) have come to support, enrich, and influence the design of craft as a school subject.

Planning crosscurricular teaching raises challenges of both a micro and macro nature. Röj-Lindberg et al. (2022) strongly emphasized that the emergence of crosscurricular teaching requires respect, curiosity, and knowledge of the teacher's subjects involved. In this way, small but decisive steps are taken to overturn Beane's (1997) thesis that schools are not made for crosscurricular teaching. The diverse backgrounds and traditions of subjects affect the process.

We are convinced that all school subjects can be analyzed in a similar way as we have analyzed the craft subjects summarized in Figure 12.3. The same opportunity exists to first think about what is medium-specific in the subject and to reason about medium-neutral contributions that the subject has.

The model in Figure 12.4 is to be regarded as a practical tool for teachers planning crosscurricular teaching. The model is an example of crosscurricular cooperation between crafts and three other subjects. The number of subjects that are brought into collaboration can, of course, vary. After analyzing one's own subject and forming a currently prevailing position on the subject's content, opportunities, and contribution to Bildung, the teachers meet in a collegial arena to, with joint efforts, shape the frameworks for crosscurricular teaching with the student's total Bildung and empowerment in mind.

Röj-Lindberg et al. (2022) referred to Gresnigt et al. and stated that the visibility of the subjects, the collaboration between subjects and teachers,

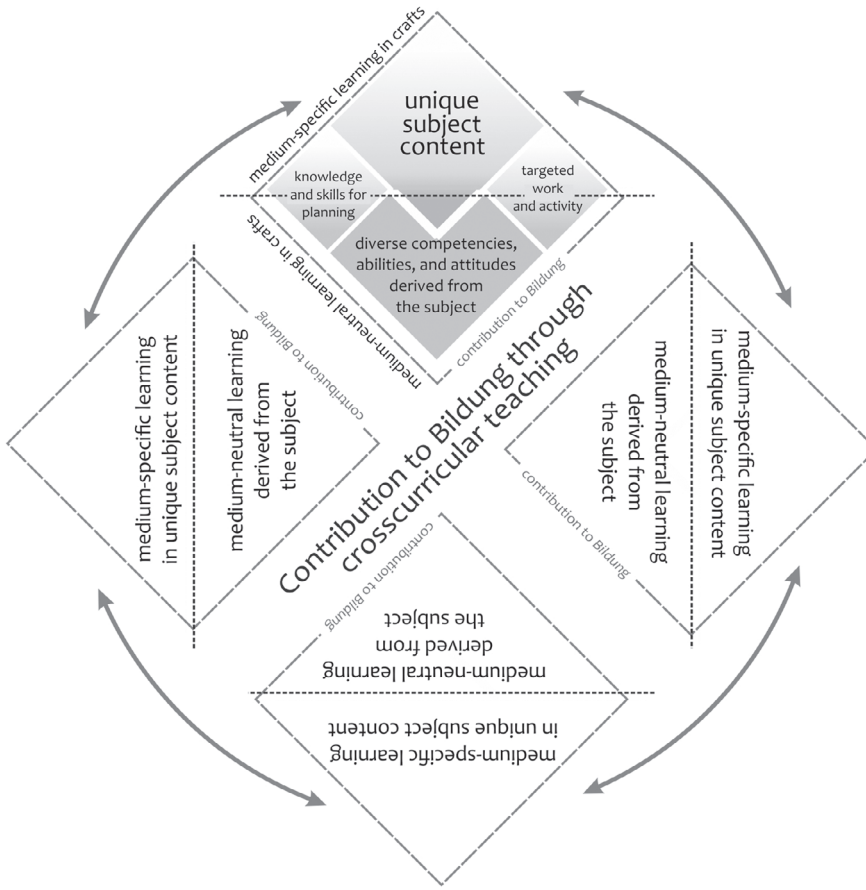


*Figure 12.4* A tool for analyzing domains of learning in crosscurricular teaching.

and the role and involvement of learners vary when crosscurricular teaching is examined in a continuum from multi- to transdisciplinary teaching (see Chapter 2). The model in Figure 12.4 can be interpreted and used in different ways, depending on the needs and starting points for the collaboration. For example, if crosscurricular teaching is based on the idea that teachers define a specific subject content, then the model can be used to analyze common content and objectives within both the medium-neutral and medium-specific domains of the subjects. We believe that the model and the support for planning also work when transdisciplinary teaching is planned. In situations where the learners sovereignly choose the content and direction of their work, for example, phenomenon based, the teachers still need to have such readiness that each subject on its own and the subjects together can support the development of the learner within different domains of learning.

## Conclusion

Our contribution to future processes where teachers embark on shaping crosscurricular teaching with the aim that different subjects contribute to a holistic Bildung of the learner centers around the models in Figures 12.3 and 12.4. With a craft case, we have shown how and what kind of versatile learning – and, thus, contribution to Bildung – an otherwise narrowly defined content of a subject can have. We have further suggested that teachers who wish to shape crosscurricular teaching can analyze their own subject and its content in a similar way. By asking what medium-specific and medium-neutral areas the subject has, it is possible to create a discussion arena for teachers and spur discussions about which domains of learning touch and overlap when teaching modules are planned. In this way, common domains of learning and contributions to Bildung are identified, as well as domains of Bildung that can be regarded as falling primarily within the responsibility of a specific school subject.

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