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Simultaneously it is held from its own representatives that the situation to an even higher degree actualizes higher education as a *Bildung* project. The prerequisites for flexibility and change competence are connected to basic values like knowledge acquisition for the knowledge’s own sake. This is because such values [...] define what has over centuries made us human, not because they can enhance our global competitiveness” (Faust, 2007).

Thus, like higher education generally, music teacher education finds itself caught between the priorities of traditional university values and the marketisation of higher education (Naidoo 2005). On the one hand, higher education has to respond to the attempts by governments around the world to alter the terms of its teaching, learning, and research by introducing market principles (ibid.). It is for this reason the political discourse on education has adopted concepts such as knowledge production, knowledge as a commodity, useful knowledge, and knowledge economy. On the other hand, higher education must reply to the critics of this paradigmatic change in educational policy who are certain that it endangers the traditional values of the universities and of higher education at large along with the values attached to their handicraft sides.

In the fissure between the two conflicting paradigms, music teacher education is not only left facing fundamental challenges, but also with certain latitude in meeting them. Of the possible focuses for looking at this more closely, the concept of knowledge promises to be fruitful, especially given the major discrepancies between market liberalism and traditional academic and handicraft notions of knowledge. For this reason, the present paper addresses the challenges the present situation poses to music teacher education, and what conclusions can be drawn from the response thus far, through the lens of the general philosophy of knowledge.

Despite the shifts in values following in its wake, when it comes to music education the debate on knowledge verges on the non-existent. Notwithstanding previous research on the issue of music education’s legitimacy relative to views of knowledge (Varkøy 2001, Johansen 2003), on the foundations of music education and curriculum theory (Elliott 1995, 2005; Nielsen 1998; Regelski 1996; Reimer 2003), on the connection between musical knowledge and education (Swanwick, 1994), and on the cognitive skills in music (Davidson & Scripp, 1992), only marginal attention has been paid to the added dimension brought by knowledge theory to the music education debate.

**Knowledge and its implications**

*Knowledge and information*

Despite it often being said that we are living through the transition from an *information society* to a *knowledge society* (Gärdenfors 2003; Korsgaard 1999; UNESCO 2005; Delaty 2001), despite *knowledge* being said to be a key factor in success, and despite *knowledge* being a buzz word in political educational rhetoric, its actual meaning is rarely problematised. For a fruitful discussion of the meaning and function of knowledge in a democratic society it would be prudent, if not essential, to problematise the relationship between the terms information and knowledge.
Both the idea that knowledge has a short shelf life and the unconcerned substitution of the phrase ‘knowledge society’ for ‘information society’ probably has much to do with the jumbling of information and knowledge. The historian of ideas Sven-Erik Liedman (2001) has argued that information is something we gather from outside, from the Internet or books, while knowledge is carried by people. Information can be repeated, replicated, and learned by rote, but for it to become knowledge, however, it must be processed, interpreted, and understood. This distinction between information and knowledge has been described by Liedman as ‘the necessary detour taken by knowledge’ (Liedman 2001, p. 24).

New knowledge originates in what we have already experienced; in the familiar and in what we know from before. This does not mean that knowledge is exclusively subjective. Each new generation must learn everything from the beginning, but knowledge is handed on and is integrated into each culture. Facts and information may change unceasingly, and new discoveries may revise previous theories, yet the fundamental laws of arithmetic still hold good, despite their age, and the theories of Newton, Darwin, and Einstein still hold, even if they have been modified down the years. This form of knowledge has been termed ‘root knowledge’ (ibid.), which is not the same as a collection of basics that it is sufficient to know; instead, it is knowledge that once understood by an individual can be to put to use – in new problems and situations, in how that individual thinks or acts. The result is that root knowledge can give orientation, even in a time of great change. In the perspective of Bildung similar priorities are encompassed by the concept of the exemplary and elementar educational content in Klafki’s (1963) categorial Bildung. The concept elementar entails the smallest albeit not the simplest building stones of the content which should be looked for to start fruitful learning processes among the students. The exemplary ideal is that knowledge of the selected educational content can be utilised in approaching new challenges and situations with regard to the learners’ orientation in their existence. Liedman (2001) argues that those who claim that knowledge is perishable cannot have reflected on the full extent of what knowledge means.

Knowledge takes many forms, and theories about knowledge are expressed in a number of ways. In our discussion, ‘information’ is close to the lowest level definition used in Bloom’s cognitive taxonomy (Bloom 1956) in which ‘knowledge’ is a body of facts the student has memorised and is able to repeat. In our view, unreflecting rote learning entails information, while knowledge is attained when information is appropriated and processed by an individual. Information and facts contribute to, but are not the same as, knowledge.

**Forms of knowledge**
The classical definition of knowledge to be found in reference books, and as much used in philosophical debate as in everyday discussion, derives from Plato (427–347 BC). His criteria for the differentiation between true and certain knowledge (episteme) and subjective belief or opinion (doxa) have held good ever since. There has never been full agreement on Plato’s definition of knowledge as ‘justified true belief’, but arriving at certain and objective knowledge is the chief criterion of science (Gustavsson 2000). Plato’s successor Aristotle (384–322 BC) broadened the discussion of knowledge by bringing in various forms of activity, but also by speaking of its various purposes. Aristotle asserted that ‘truth is the aim of
Theoretical thought as action is of practical thought’ (Aristotle 1998, p. 44). In this way episteme is differentiated from action – in two ways.

Episteme stands for knowing; for that certain knowledge of how nature, mankind, and the world are constituted and function. This theoretical pursuit is bound up with the things that in reality humans cannot change, but which they can certainly obtain knowledge about by studying, describing, and explaining. Alongside episteme are techne and phronesis, two forms of action that aim to produce or express something, and the end product of which is desirable in itself. Techne is associated with craftsmanship, and the processes of creating, manufacturing, and producing. Its distinguishing feature is proficiency – knowing the tools and materials, knowing how to proceed. But it is not always enough. To build a boat or a house, you not only have to be able to follow a design, but also to use your judgement. The other form of practical action, phronesis, is interpersonal, and is associated with ethical, social, and political life. Phronesis is a matter of attaining ‘the good’ for both individual citizens and the common weal, and its distinguishing feature is a practical wisdom learned by example, models, and practise in actual situations. Its quality lies in its actions, but not only in the assimilation of traditions and customs. The ability to judge a situation and to determine a meaningful way to proceed demands critical reflection. Phronesis is the acquisition of knowledge that will influence how our characters develop. Seen from outside phronesis is a way of acting; seen from within it is a way of being.

In music teacher education, the operation of episteme, techne, and phronesis can be observed in the musical and the educational competences we want our student music teachers to develop. In terms of musical knowledge, recent decades have seen contributions that highlights the importance of making music – including listening to music – as a prerequisite for understanding its theory, matched by the notion that the theoretical insights so gained will in turn benefit music-making. One example is Swanwick’s (1994, p. 41) elaborations on the relationship between intuitive and logical–analytical knowledge. This points to the need for episteme and techne to mirror each other, with vital inferences for the planning, execution, and evaluation of music teaching and learning. In this respect, elements of phronesis are imperative for student music teachers’ learning outcomes and future success on the labour market.

This leads us to the educational knowledge of the student music teachers. Here episteme has traditionally held a strong position, and there is no similarly strong tradition of scrutinizing it in terms of techne and phronesis. This largely depends on the nature of techne and phronesis themselves – to study them systematically would inevitably necessitate describing them as episteme. However, we have a rich tradition of expert music teachers who know what to do, and how to do it in a way conducive to human wisdom and ethics. It is fairly obvious that episteme perspectives on, for example, developmental psychology or the theory of motivation cannot be directly transformed into teaching strategies. In looking for their applications in practical teaching there is much to be gained by using the prism of techne and phronesis. In addition, there is the encouraging experience of ‘method systems’ such as Jaques-Dalcroze, Orff, Kodaly, and Suzuki, in which the techne element in music teaching is balanced by at least a nod in the direction of phronesis.
If we accept that neither the musical nor the educational side of music teaching and learning should be allowed to dominate, but that they should act together in a close, highly developed manner, it becomes clear that successful, high quality music teacher education cannot be determined by the priorities of market-oriented educational policy. Likewise, music teacher education cannot shy away from facing such priorities, even if the very act of navigating them will reveal their shortcomings.

**Theoretical and practical knowledge**
The boundary between *techne* and *praxis* is problematic in many ways. Over the centuries they have consumed each other, to the extent that technology has occasionally been synonymous with all things practical, with handiwork and production. When people today refer to ‘practical’ matters they primarily mean something tangible. Few have ethical or interpersonal *phronesis* in mind.

The problems at the boundary between *techne* and *praxis* have consequences for both the musical and educational competences we want our student music teachers to achieve. Aspects of *episteme* as well as *techne* can be studied separately at an institution, but when putting all this into practice in a classroom full of students, the ethical and interpersonal implications are unavoidable. To this extent there is no such thing as *praxis* without *phronesis*. The interplay of *episteme*, *techne*, and *phronesis* with the musical and educational facets of music teacher education has consequences for the student music teachers’ holistic understanding of their future profession, as well as the everyday challenges of selecting educational content (Johansen, 2007) and working forms. It should be equally obvious that these dynamics and principles, and any balance struck between them, will take on a very different hue in a market-inspired educational discourse as against one informed by, say, *Bildung*. A vital difference is the weight accorded the intrinsic value of knowledge by *Bildung*, over and above its instrumental potential.

One field where the division between practical and theoretical knowledge was at its most awkward, and remains so to this day, is art. An artist cannot create an immediately useful product in the way that other artisans can, but nor can the product to be tested in the light of scholarly theory. Like the artisan’s, the results of the artist’s work are achieved with the help of tools, yet artistic endeavour resembles academic knowledge in its dependence on ideas (Liedman 2001, p. 85). Initially *techne* was synonymous with art and technology. From the Latin *ars* to the English and French *art*, all are translations of the Greek *techne*. However, when ‘art’ and ‘technology’ went their separate ways in the eighteenth century technology came to mean something very different to art, and on occasion they are rated as direct opposites.

Liedman maintains that all knowledge is practical, arguing that art is proof that the boundaries between practice and theory are untenable. Even if theoretical work depends on texts or manuals, the determining factor is the practical ability needed to carry out the actual stages that distinguish this activity (ibid.). In this respect, research can also be understood as a practical activity that embraces *episteme*, *techne*, and *phronesis*. Both
Wittgenstein (1979) and Marx (1995) set out to demonstrate that scholarly work was grounded in everyday life and was a form of practical occupation. According to Marx, scholarship is both work and practical activity, but as such is never fully realised (Marx 1995). As Dewey puts it, the reality of theory exists in and through practice, and the boundary that is usually drawn between theoretical and practical occupations is antiquated (Dewey 1998). This highlights the existence of undercommunicated aspects of techne and phronesis within so to speak all the episteme content of music teacher education, an issue that becomes particularly problematic if the education is supposed to be research based. There is an obvious risk for the continuing undercommunication of such dimensions if the productivity-oriented concept of knowledge is allowed to dominate.

Rather than the qualities inherent in different kinds of knowledge, the opposition of theoretical and practical knowledge reflects a gradation between the more refined and the simpler. In Ancient Greece, parallel with the division between practical and theoretical knowledge, the notion developed that each theoretical activity was dependent on skills that had to be practiced. It is through practice that people gradually attain the maturity necessary for the noble task of theory. The difference between the observer and the artisan is that the former has progressed much further in his development. The practical forms of knowledge have long held a subordinate position, matched by the increasing intellectualisation of education. Critics would argue that this focus on theoretical knowledge leaves both people and crucial knowledge behind (Gustavsson 2000). As a reaction to the dominance of intellectual knowledge there has been a crop of works – e.g. Schön (1983) and Molander (1993) – that consider practical knowledge.

When it comes to music, it is in its nature to address itself to our senses and to non-verbal knowledge. In order to experience and understand music, we do not need to employ our cognitive knowledge. But in order for us to experience music, it must first be created or recreated. For musical expression the element of craft is important.

The practical, manual, and artistic parts of musical knowledge do not immediately relate to intellectual knowledge, and at first glance these parts make the music subject appear markedly different from other school subjects. This ars dimension (Nielsen 1998, p. 106), however, is not the only aspect of music as a subject.

Much of it can also be described in words, not least when teaching, when we want to offer a greater understanding and knowledge about music. While some philosophers of music hold that this is a circuitous route to musical experience (Reimer 2003), others note that naming and identifying is a precondition of knowledge, and that the interplay of perception and cognition can prevent teaching from becoming too one-sided (Nielsen 1998, p. 111). A third position holds that music has to be initially learned as a practical, handicraft and artistic activity but thereafter the experiences of those activities must be reflected on and verbalized. Only when all these knowledge forms cooperate and mutually reflect each other “real musical knowledge” occurs (Swanwick 1994, p. 41).
Teachers also need a conscious and reflective notion of the possible in order to discuss educational choices. Music teacher education therefore embraces both the artistic and the practical; both manual and theoretical knowledge. However, the mutual relationships between various knowledge forms will hardly obtain good conditions within a test-based educational system within which measurability is the ideal.

Many who teach the arts feel that the conflicts arising from their subject’s status are difficult to handle (Georgii-Hemming 2005). Some of them try to overcome this by designing their teaching to resemble the teaching of traditional theoretical subjects, a strategy that reflects the well known legitimating policy of describing the music subject on other subjects’ premises. Following this train of thought the educational discourse of test- and measurability offers a way to ascribe status to the music subject. Other teachers do their uttermost to emphasise the dissimilarities from theoretical knowledge. It is less usual to reflect, discuss, or test of forms of musical knowledge or their position in an educational context, yet whether it is undertaken by future music teachers, current music teachers, or academic researchers, it is this we believe will be the determining factor in a change of attitudes and the advent of a developed, democratic view of knowledge.

The value of knowledge

Even in the political rhetoric that habitually describes the value of knowledge in terms of competitiveness and productivity there is often an inbuilt vagueness. The difference between the value of knowledge and education to the individual or to society, democracy, or the economy in its widest sense is hard to pin down.

We have only touched upon the opportunities for a fuller life offered to the individual who possesses knowledge. Knowledge also serves to create context. For example, a knowledgeable listener can identify the structure and character of a piece of music and set it in its larger musical and historical context. Music education can also raise the individual’s level of awareness, encourage the exploration and articulation of emotion, prompt creativity, and shape personal and cultural identity. Democratic music education (Woodford, 2005; Marconi & Stefani, 1987) that does not merely occupy itself with the familiar, but leads students to encounter music in unknown forms or from other cultures or epochs, can contribute to increased tolerance and openness towards what is regarded alien (Georgii-Hemming & Westvall forthcoming; Karlsen & Westerlund, 2009; Ruud 1996). In other words, music and musical activities can by extension both express and generate processes of social change (Jorgensen 2003, p. 30). One economic value, in a very narrow sense, that the music industry can be thought to possess presupposes the existence of musicians and producers who have the ability to give ideas an audible form. This is something to which music education can make a contribution. A broader interpretation of the economic value of musical knowledge includes its health benefits, in an age when increasing numbers of people suffer from stress and ‘burn out’.

This raises questions about the relationship between knowledge and meaningfulness – in two ways: First, in what ways is knowledge which is sought for based on the ideal of testing and measurability meaningful for the students? And secondly, in what way do the forms of
knowledge that are viewed as goods or services to be bought and sold, or to be formalised as points of merit, relate to the meaning of life? It is a truism that school is a lesson for life; that it ought to provide the knowledge that enables people to experience meaning in their lives. If we find meaning in what we do, it follows that we will be capable of working harder and being active longer. These should be central priorities in music teacher education and point to a plethora of knowledge forms to be developed among the student music teachers. Among these, are we to accept the selections and ascriptions of value to certain forms above others that are entailed by the ideals of testing, measurability and knowledge as a commodity?

At the point where music and educational practice meet – where musical connotations reverberate within a framework of human factors, both direct and indirect – specific discourses on (musical) knowledge, teaching, and school emerge. Or to put it slightly differently, music as a phenomenon meets the expectations of students, teachers, and society at large. The question then becomes what the qualities of musical knowledge might be, and which factors could be considered to be central to music education, with obvious bearings for music teacher education in that it should make its students aware of these connections.

Music teachers attach weight to different aspects of their subject – the student’s personal development, musical craft, or the musical end result as well as the relationship between music and society – but most of them frame their argument using compound, fluid categories that do not lend themselves to being dissected. Furthermore, many teachers in other subjects, not only in music, have a tendency to view music as a unique subject, unlike other subjects (Nielsen 1998, p. 35). Wherever these notions hold sway, unreflecting and possibly exaggerated as they are, it becomes difficult to participate in general educational debates such as the response to a simplistic, market-oriented view of knowledge. An important challenge for music education research and music teacher education is thus to allow a pause for reflection on the criteria and goals of both teaching in general and the subject in particular.

Within the philosophy of music, music’s value is seen in terms of approaches to knowledge and other values that speak inwards to the unique, aesthetic character of music as much as outwards to general terminology and actions. Even those who speak of its distinctive aesthetic character like to include values drawn from beyond the musical edifice. Music as an object can refer to a number of different dimensions and meanings of an emotional, intellectual, or existential nature that have much in common with one another (Reimer 2003). Conversely, it is by no means self-evident that assertions of the value of music in terms such as ‘exercise’ and ‘process’ only relate to external, non-musical values. Elliott (1995) takes for granted the subject’s unique character in his discussions, but argues that music’s value also rests in musical action. Musical experience and action include a process of reflection, which is why music-making is a unique source of self-growth and self-knowledge (ibid., p. 121).
Considerations also include the way in which music education can contribute to the realisation of general educational goals in schools. The problem turns on the issue of Bildung, and the kind of knowledge and basic outlook that we hope will characterise our society. The relationship between a generally accepted approach to knowledge and the educational considerations crystallised in the actual subject content can best be described as a problem of justifiability.

If various aspects of knowledge are viewed as positive assets without over-emphasising any of them in any particular respect, music becomes a subject that can contribute to striking a balance between practical, artistic, and academic knowledge in school, both in itself and in relation to other subjects (Nielsen 1998). As a subject, music can single-handedly satisfy a number of needs, but it also fulfils a function simply by showing that there are ways to bring together different forms of human knowledge. That the essence of art, and more specifically music, can never completely be translated into language does not mean, however, that they exclude each other, but rather that they are two forms of knowledge that can be mutually enriching. Seemingly supporting Swanwick’s (1994) argument about the mutual supporting of intuitive and logical-analytical knowledge, Liedman (2001) holds that discussion and reflection on an artistic experience can bring ‘an ever richer canopy of associations’ and ‘strands of thought’, far finer tools with which to understand cultural expression. ‘Art is a branch of knowledge both for its creators and for its audience,’ writes Liedman (ibid., p. 75).

To be a professional music teacher means having a personal, nuanced, and articulated view on the subject’s mission and worth. However, research has shown instead of legitimising teaching by using a consciously intellectual approach to knowledge, the focus is instead on ideas of what, why, or whom music is good for (Nielsen 1998, p. 73). Teachers are accustomed to relying on their own teaching experience, depending on ideas that are rarely related to curriculum formulations, music education theory, or rhetoric at a socio-political level (Georgii-Hemming 2005; Johansen 2003 p. 376). Taken with the current public debate on schools and education, in which the term knowledge is much bandied about and musical education courses seem to be under threat, we would argue that it is high time for music teacher training, music education, and the philosophy of music to engage in an instructive and nuanced debate on the forms of musical knowledge and music’s true worth.

**Concluding remarks**

Over the centuries many thinkers have expressed the hope that economic and scientific progress, technological developments, human freedom, the riches of art, and a democratic society would come together in a harmonious whole. The reality – in schools and universities or in professional and social life – has proved somewhat different. The overwhelming priority for social development lies rather in the economy, science, and technology, leaving freedom, art, and democracy to make their own way, their existence purely a consequence of their contribution to the progress of society.

The alliance between economy, technology, and exact science is strong – each is dependent on the other for its continued development (Liedman 1997, pp. 537–541) – and their knowledge, tailor-made for specific purposes, is justified on the basis of their necessity in
improving living conditions across the world. Yet there are several signs that this particular alliance is hardly the answer to the question of human freedom, art, and democracy, or indeed for life lived to the full and sustainable development for coming generations. In the first place we have incontrovertible evidence, from philosophy to bald facts, of its wanted consequences: nuclear weapons, pollution, global warming, and the collapse of the world economy. Secondly, in an educational context it often seems to shoot itself in the foot. One of many examples is the commercial sector’s need for creativity, flexibility, and the ability to change, which stands in stark contrast to the narrow-minded and conformist education that results from an emphasis on measurability, testing, and standardised knowledge.

Not only does the demand for a form of knowledge intent on productivity and profitability have damaging consequences for the very goals it seeks, it spurns vital and deeply human values – the knowledge that holds the promise of a more worthwhile existence, the fount of wisdom and insight. And all requiring time and thought. The only possible response is to strike a blow for the acceptance of many and varied forms of knowledge, and to see to it that priority is given to a greater understanding of the function of knowledge.

Artistic and musical knowledge have no fixed form, even if they do have institutions that serve to confirm what they are, and their worth is constantly called into question. That the worth of musical knowledge should be recognised alongside economic rationality and the more ‘precise’ forms knowledge is essentially a public concern. There is no prescription for how this balance should be achieved, but whatever else, resignation is not an alternative. We know that humankind is dependent on technological, scientific, and economic progress, but equally we know that humankind is creative and interpretive.

It is often said that democracy must be constantly defended, and that it cannot be learned in the same way as the names of the capital cities of the world. The meaning and value of democracy is learned through growing up in a culture marked by openness, tolerance, and the courage to speak out. In the same way, art must continually be mastered and formed afresh; the meaning and promise it conveys demand constant reconfiguration, constant problematisation.

Current educational policy, set as it is on production-oriented ‘results’, must be resisted. Such resistance is scarcely going to be led by the unholy alliance of economics, technology, and science; it falls to others to determine how best to engage with its concerns. Indeed, the debate is one of the most pressing challenges facing music education and the philosophy of music education today. For the same reason, it is a vital priority in the education of the music teachers of tomorrow.
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Swedish National Agency for Higher Education.