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# Access-Awareness-Agency (AAA) Model of Music-Based Social-Emotional Competence (MuSEC)

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[journals.sagepub.com/home/mns](http://journals.sagepub.com/home/mns)**Suvi Saarikallio**

## Abstract

Social–emotional competence (SEC) is a set of psychological resources, highly relevant for adaptive growth and wellbeing. Music has been argued to support social–emotional skills, yet there is little theoretical consensus about the underlying impact mechanisms and the special nature of music as a medium for SEC. This article presents a theoretical model of music-based SEC that combines research from general SEC models with music-specific literature from music psychology, music education, music therapy, and music for health and wellbeing. The proposed *access-awareness-agency* (AAA) model defines music-based social–emotional competence (MuSEC) as interplay of embodied *access*, reflective *awareness*, and sense of *agency*. These three components are defined as the core competencies that music in particular facilitates; competencies that underlie and explain further competence in behaviors ranging from affective self-regulation to social interaction. The article elaborates these MuSEC components and their potential connections to particular equivalents in general SEC and proposes hypotheses for empirically testing the model. The model offers a novel, integrative SEC-based perspective for advancing theoretical coherence in the growing field of music as social–emotional wellbeing and growth.

## Keywords

Affective awareness, affective self-regulation, emotional development, expressive interaction, positive affect, sense of agency, social–emotional competence, wellbeing

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## Introduction: Can music promote social–emotional competence?

Music inherently relates to social–emotional behavior. It is a forum for emotions (Sloboda & Juslin, 2001), embodiment (Leman, 2016), and interaction (Clayton, 2009; Cross, 2014; Tarr, Launay, & Dunbar, 2014). Thus, in elaborating the relevance of music—whether discussing child development, education, or health promotion—we can certainly assume social–emotional aspects to play a role. This article approaches the social–emotional relevance of music from the perspective of skill development, that is, the potential of music to promote social–emotional competence (SEC).

A growing body of research has evidenced the positive impacts and transfer effects of music engagement on cognitive achievement (Miendlarzewska & Trost, 2014; Schellenberg, 2004). However, considering the strong link between music and social and emotional experiences, one

could particularly expect music’s transfer effects to occur in the social–emotional domain. Preliminary evidence shows that musically trained adults outperform musically untrained adults in recognizing emotions in spoken sentences (Thompson, Schellenberg, & Husain, 2004). Musical training relates to higher scores in the Trait Emotional Intelligence Questionnaire (TEIQue) (Petrides, Niven, & Mouskounti, 2006) and lower scores of alexithymia (using the Toronto Alexithymia Scale (TAS-20)), that is, the inability to recognize emotions in self and others (Theorell,

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Lennartsson, Mosing, & Ullen, 2014). Musical training has also been found to correlate with a higher score on the Test of Emotion Comprehension (TEC), but the effect disappeared when general IQ scores were held constant (Schellenberg & Mankarious, 2012). Most studies in this field have been correlational, but Thompson, Schellenberg, and Husain (2004) conducted an intervention study with 6-year-olds showing that children who received 1 year of musical training were better in identifying the difficult emotional expressions (anger and fear) in speech prosody than their peers in the control group (no training).

An increasing amount of research is substantiating the positive impact of music engagement on pro-social interaction. Studies on group singing (Anshel & Kipper, 1988, Clift, 2012; Murcia & Kreutz, 2012) and dancing (Davidson & Emberly, 2012) indicate connections between musical activity and increased levels of social communication and bonding. Joint music engagement has been shown to increase children's spontaneous cooperative and helpful behavior (Kirschner & Tomasello, 2010), and empathy (Rabinowitch, Cross, & Burnard, 2013). Rabinowitch, Cross, and Burnard (2013) designed an empathy-promotion music program consisting of interactive musical games for a period of one school year and observed increases in primary school children's empathy scores in comparison with a control group. Kirschner and Tomasello (2012) conducted an experiment with 4-year-old children: the experiment group, in which children participated in singing, playing and dancing, showed higher scores than a control group in spontaneous helping and cooperative problem-solving tasks. Costa-Giomi (2004) found that 3 years of weekly individual piano lessons resulted in improvements in school children's self-esteem and school music marks, but not in academic achievement in math and language. The impact of music engagement on social bonding has also been evidenced through physiological correlates, such as release of oxytocin (Koelsch & Stegemann, 2012). However, some contradictory findings also exist; Schellenberg (2004) found that keyboard and Kodály voice lessons brought increases in children's IQ scores but not in their social behavior as measured by the Behavior Assessment System for Children (BASC, Reynolds & Kamphaus, 1992).

Evidence is thus emerging about the connections of music engagement to social-emotional competencies such as emotion recognition, empathy, pro-social behavior, and self-esteem. However, the current research base comprises only a handful of studies, each of which has targeted somewhat different concepts as outcomes, employed different measures for assessing them, and investigated different types of musical behaviors as the source of impact. The field is currently too scattered to enable general conclusions about connections between music and SEC. The topic is complex, as music engagement can be anything from a solo violinist training for a performance to 4-year-olds participating in a music and movement group, to friends

listening to music together. There is a notable discrepancy of most of the above-mentioned research on the impact of music on SEC being studied within music training and active music-making contexts, while most of the personal social-emotional uses of music are actually being studied in the context of everyday music listening (Schäfer, Sedlmeier, Stadtler, & Huron, 2013; Sloboda, Lamont, & Greasley, 2009; Västfjäll, Juslin, & Hartig, 2012). A comprehensive understanding of music as a source of social-emotional competence should be able to integrate these fields. One of the only studies focusing on the impacts of different types of musical activities was conducted by Anshel and Kipper (1988), who compared the impact of music listening, singing, poetry reading, and film viewing on trust and cooperation. They found that the presence of music impacted trust, regardless of the activity type, while active engagement (versus passive engagement), impacted cooperation, regardless of whether music was present.

In sum, there is some indication that music engagement relates to some aspects of SEC. However, music engagement is still often treated as a sort of a black box: the research does not attempt to explicate the mechanisms of the proposed impacts on outcomes. For example, does one type of musicking (personal music listening for mood regulation) have the same impact as another (engaging in a weekly brass band rehearsal)? What is the expected outcome in terms of social-emotional competence: improved ability to recognize tenderness in music, higher scores in empathy? What would be the underlying impact mechanism for these? Do different types of musical activities share the same mechanisms? A good example of a puzzling result is a recent randomized controlled trial (RCT) that investigated the impact of preventive group music therapy on adolescents' wellbeing and healthy use of music (Gold, Saarikallio, Crooke, & McFerran, 2017). The control group engaged in self-directed music listening, and both groups showed similar improvements. The impact mechanism remained an open question. As a whole, the field urgently needs conceptual clarification, integration, and coherence, particularly about the underlying impact mechanisms, to allow knowledge from studies from music psychology, music education, and music therapy to accumulate. This article takes a step toward addressing this need, through integrating approaches from general SEC research and various aspects of music research, with the aim of introducing a preliminary model of music-based social-emotional competence.

## **The concept of social-emotional competence**

Social-emotional competence (SEC) refers to a set of psychological resources involved in social-emotional behaviour. Mayer and Salovey (1997) approached the topic from the perspective of intelligence, and developed a model of emotional intelligence that differs from general

intelligence and consists of four components: *perceiving emotions* (recognizing emotional information in faces and pictures), *understanding emotions* (knowing how emotions relate to each other and follow each other), *managing emotions* (regulation of emotions in self and in others), and *using emotions to facilitate thought* (generate a mood in the service of cognitive tasks). Bar-On's (1997, 2006) conceptualization of emotional-social intelligence involved social aspects to a greater degree, consisting of the following areas: *intrapersonal* (emotional self-awareness, assertiveness, self-regard, self-actualization, independence), *interpersonal* (empathy, relationship skills, social responsibility), *adaptability* (problem solving, reality testing, and flexibility), and *stress management* (stress tolerance, impulse control). Rose-Krasnor (1997) focused particularly on social competence, operationalizing social competence as *effectiveness in interaction* involving social skills, peer status, relationship success, and functional goal-outcome assessments. Saarni's (1999) pioneering theorizing about the concept of emotional competence fundamentally bridged emotional and social aspects with a model that consist of eight skills that are relevant for children's social-emotional development: *awareness* of one's own emotions, ability to *discern and understand* others' emotions, ability to use the *vocabulary* of emotion and expression, capacity for *empathic* involvement, ability to *differentiate subjective emotional experience from external emotion expression*, adaptive *coping* with aversive emotions and distressing circumstances, *awareness of emotional communication* within relationships, and capacity for *emotional self-efficacy*. Following Saarni's theoretical propositions, Halberstadt, Denham, and Dunsmore (2001) formulated a model of *affective social competence* that consists of awareness/identification, contextual understanding, and management/regulation of three affective components: *sending* affective messages, *receiving* affective messages, and *experiencing* affect. Denham et al. (2012) also recently integrated Rose-Krasnor's (1997) model of social competence and Payton et al.'s (2000) model of social-emotional learning to show how the specific social and emotional skills relate to each other to form overall social-emotional competence. They argue that success in self-regulation, social interaction, and group involvement are founded on three emotional competence skills: *self-awareness* (identifying emotions, prosocial responsibility), *self-regulation* (managing emotions, cognition, and behavior), and *social awareness* (perspective-taking, understanding emotions, and caring for others), and two relational/prosocial skills: *responsible decision-making* (analyzing situations, goal setting, problem-solving) and *relationship skills* (cooperating, listening, taking turns, seeking help).

In sum, several related models have been formulated in parallel, and in most of these the emotional and social components show considerable relatedness. The integration of social and emotional aspects follows Saarni's (1999)

pioneering thoughts about emphasizing the genuine internal experiential aspects of emotional competence, while acknowledging that emotional competence is contextually anchored in social meaning. Research has evidenced pathways between emotional competence and social competence: emotional competence, assessed at age 3–4 years through emotional expressiveness, emotion regulation, and emotion knowledge, has been shown to relate to social competence assessed at age 5–6 years in kindergarten, as evidenced by sociometric likability and teacher ratings (Denham et al., 2003). The relevance of social-emotional competence has been discussed particularly in relation to supporting healthy development in childhood and adolescence (Clarke, Morreale, Field, Hussein, & Barry, 2015; Hughes, White, Sharpen, & Dunn, 2000; Jones, Greenberg, & Crowley, 2015; Keane & Calkins, 2004; Steinberg, 2005), because these skills increase resilience and protect against the impact of psychosocial and environmental risk factors, thus preventing developmental trajectories that can lead to behavioral and mental health problems (Eisenberg & Fabes, 1998; Eisenberg et al., 1999; Seiffge-Krenke, 2000).

## Towards a music-based model of SEC

General social-emotional competence is a useful concept for theorizing on how affective-interactive experiences of music have relevance for personal growth and wellbeing. However, do theoretical frameworks from general psychology fully capture the essence of what music, in particular, is good for? Music is a specific, non-verbal, time-bound, symbolic, and artistic form of expression and experience. The special nature of music likely makes it well suited for advancing certain competencies, but perhaps not for some others. To provide grounded hypotheses about how music engagement relates to wellbeing through improving social-emotional competence, we need first to clarify those sub-components of SEC that music, in particular, is able to facilitate.

What, then, constitutes the core of music-based SEC? MacDonald, Kreutz, and Mitchell (2012) list several reasons for music's impact on health and wellbeing: music is ubiquitous, emotional, participatory, engaging, distracting, physical, ambiguous, social, communicative, impactful on behavior, and part of identity. Factors such as Musical Seeking, Emotion Evocation, Mood Regulation, Social Reward, and Sensory-Motor rewards (Mas-Herrero, Marco-Pallares, Lporenzo-Seva, & Rodriguez-Fornells, 2013) have been defined to describe the musical reward experience. Others have variously described music as having psychological functions that can be grouped into Arousal and mood regulation, Self-awareness, Social Relatedness (Schäfer et al., 2013); Interpersonal relationships, Identity, Agency, and Emotions (Laiho, 2004); Affective, Social, Cognitive, Eudaimonic, Goal Attainment, Everyday Listening, Music-focused Listening,

Sleep-aid, and Creating a Personal Space (Groarke & Hogan, 2016); Intellectual Stimulation, Mindwondering and emotional Involvement, Motor synchronization and enhanced wellbeing, Updating one's musical knowledge, Killing time and overcoming loneliness functions (Greb, Schlotz, & Steffens, 2017), or Cognitive, Physiological, Social Group, Social Individual, Emotional, and Specific Regulatory Strategies functions (Maloney, 2017).

The social-emotional power of music evidently relies on the fact that music is a multi-faceted realm of experience and behavior. Music reaches human experience at a multitude of levels, simultaneously activating brain structures responsible for attention, self-regulation, motor behavior, and reward (Koelsch, 2014). In order to provide an overall framework, Bonde (2011) proposed a theoretical model of Health Musicing, a conceptualization of the dimensions through which music operates in supporting health promotion. The model contains two underlying dimensions that range from *body* to *mind* and from *individual* to *social*. Bonde's model is a broad framework, but it captures some of the essential notions of contemporary music therapy literature concerning the ability of musicking to operate fluently as both a link from embodiment to meaning-making and a dialogue between internal experiences and social participation. Somewhat similar aspects are addressed in MacDonald and Wilson's (2014) model of how group music effects wellbeing: based on a review on musical improvisation from a health-perspective, their model emphasizes *access to unconscious*, *creative absorption*, *creative interaction*, and *emotional expression* as essential mechanisms explaining the health-relevance of improvisation. A model outlined by Saarikallio (2017) describes components that form a musical identity that fosters emotional health. The model identifies *self-reflective awareness* and *sense of self-agency* as ingredients that facilitate both management of negative affect and induction of positive affect, making music engagement beneficial for emotional health.

Such models capture recent literature in music and health, music psychology, and music and emotion research, but none frame this literature within the SEC concept. The need for building a music-based understanding of SEC has been noted in recent discussion of music as part of public health (Saarikallio & Baltazar, 2018), but no prior models exist. This article seeks to bring the music literature in dialogue with the general SEC literature and create a music-based conceptualization of SEC.

### **Access, awareness, and agency as the key assets of musicking**

In the following, a proposition for an access-awareness-agency (AAA) model for music-based SEC is outlined, referring to some of the major trends in recent music psychology, music therapy, and music education research. Access, awareness and agency are presented as key

elements for making music a resource for improving social-emotional competence, in behaviors ranging from affective self-regulation to social interaction.

### ***Music as access—reaching embodied and non-verbal levels of experience***

Influenced and inspired by the previous models (e.g., Bonde, 2011; MacDonald & Wilson, 2014; Mas-Herrero et al., 2013), the current AAA model places *access* to embodiment as its starting point. One of music's key strengths is its ability to reach the embodied, unconscious level of experience, and music research has been one of the pioneering fields of embodied cognition (Leman, 2016). The symbolic quality of music that allows playful, safe, and self-distancing reach of deeply meaningful personal content has already been discussed by philosophers such as Langer (1942). Pioneers of developmental psychology such as Daniel Stern (1985, 2010) and Colwyn Trevarthen (2013) argue that music operates through affective embodiment, similarly to the nonverbal, archaic forms of expression that are already present in infancy and even allow access to the subconscious. Stern introduced the concept of vitality affects to define the experiential world of an infant, in which the vital processes of the body, such as breathing, sleeping, and rising and declining of emotions, become recognized, defined, and are given meanings through the early, multisensory interactions between the infant and the caregiver, fostering the development of a sense of self-agency.

Music effortlessly allows access to affective embodiment, in relation to both internal experiences and interpersonal interaction. Music is an effective form of expressive communication (Gross, 2014; Juslin & Laukka, 2003), able to communicate not only emotion (e.g., Gabrielsson & Lindström, 2001) but also social intentions, such as being domineering, disdainful or conciliatory (Aucouturier & Canonne, 2017). Probably the most widely studied characteristic of music that fosters embodied intersubjectivity is rhythmic periodicity: periodicity in music allows mutual synchronization and joint interpersonal action at the level of rudimentary embodied behavior (Keller, Novembre, & Hove, 2014; Knoblich, Butterfill, & Sebanz, 2011). The relevance of participation in interpersonal experiences at the embodied level has been evidenced: the experience of intersubjective synchrony effectively increases prosocial behavior among individuals (Cirelli, Wan, & Trainor, 2014; Rennung & Göritz, 2016).

Music's ability to provide access to embodied, nonverbal levels of experience also resonates with how emotional processing is conceptualized in a therapy context: optimal emotional processing in psychotherapy should contain activation of emotional arousal, and the ability to emotionally tolerate that arousal, and also allow self-reflective meaning-making about the experience (Greenberg & Pascual-Leone, 2006). Music-making and music listening often serve as the embodied-symbolic trigger and the safe, tolerable space for emotional experiences to emerge and be

approached, facilitating the client's initial access to and ability to endure difficult experiences, which can then be processed in discussion with the therapist (Erkkilä, Ala-Ruona, Punkanen, & Fachner, 2012). The sense of communication without verbal exchange and the act of sharing emotional experiences non-verbally with the therapist and other clients have been identified as a fundamentally relevant aspect in client groups ranging from depression to autistic spectrum disorders (MacDonald & Wilson, 2014).

### *Music as awareness—self-reflective comprehension of experience and behavior*

The essence of music as a form of SEC not only relates to accessing the embodied but also the potential of bringing these non-verbal levels of experience into dialogue with conscious reflection and meaning-making. Many theoretical propositions about the affective impact of music address the concept of affective *awareness* in one way or another. Even Ruud's (1997) discussion about the *awareness of feelings* posits that music may enhance the ability to experience various emotional nuances, express various degrees of intensity of emotions, and that this may further help to maintain precise concepts about feelings. Similarly, Frijda and Sundararajan (2007) write about *refined emotions* and propose that musical emotions (as art experiences in general) are characterized by self-reflection, detachment, and elaborative awareness of the experience, which allows self-reflective understanding and the experience of emotional nuances. Garrido and Schubert (2010, 2011) further argue that music allows simultaneous absorption and dissociation, with the opportunity to affectively merge, yet appropriately dissociate oneself from, the affective content, and so also enables the enjoyment and appreciation of sad music and difficult emotions. Lehtonen (1993) states that music facilitates self-reflective processing of deeply personal affective experiences because it provides an affectively touching, yet content-free story line for personal mental processing, and DeNora (1999) calls music a "magic mirror" that allows one to reconfigure self-image.

All of the above-mentioned accounts stress the possibility of accessing affective experience in a deeply personal, experiential, and meaningful manner that at the same time allows for reflection and self-distancing. This reflective meaning-making is apparent in the use of music for mood regulation in daily life, as described by a participant in an interview study (Saarikallio, 2011):

[P]erhaps you can somehow live through your pain while you hear someone sing sad songs... for me it helps, that if I'm dealing with some problem, and if there is also some music that deals with it, it does help me... I believe the changes in harmony are such, when the chords progress, and certain evergreens, they bring so many associations, and somehow help you to work through... I clearly work through my feelings through the music.

Some have argued that immersion in a sad song can be beneficial if it allows solace, comfort, or reflective insight (Saarikallio & Erkkilä, 2007) and, indeed, research on the health-relevance of musical affect regulation has identified reappraisal, the ability to obtain self-reflective insight, and reframing experiences in a more positive viewpoint as factors that explain the connection between music listening and indicators of health and wellbeing (Chin & Rickard, 2013; Miranda, Gaudrea, Debrosse, Morizot, & Kirmayer, 2012; Randall, Rickard, & Vella-Brodrick, 2014; Saarikallio, 2017; Thomson, Reece, & Di Benedetto, 2014; Van den Tol & Edwards, 2014).

The relevance of music in facilitating conceptual meaning-making processes is not restricted to affect self-regulation but also concerns social interaction. Trevarthen (2013) argues that music conveys intersubjectivity through embodiment and meaningful affect and further connects the embodied experience to personal meaning. An interesting account combining both embodied and meaning-making levels of musical interaction for the enhancement of pro-social behavior was introduced by Rabinowitch et al. (2013), who outlined several empathy-promoting musical components in their intervention study; these included more basic components such as movement/motor resonance, entrainment, and imitation, but also more complex components such as joint intentionality and intersubjectivity. In terms of empathy promotion, the element of conceptual awareness of affective interaction may indeed play an important role: the conceptual ability to identify and label the emotional content of intended musical expression has been shown to relate to general empathy (Saarikallio, Vuoskoski, & Luck, 2014; Wöllner, 2012).

Many authors have noted the inherent presence of both embodied and conscious levels of experience in music. Eerola, Vuoskoski, Peltola, Putkinen, and Schäfer (2018), for instance, argue that emotions in music are processed at three levels: biological, psycho-social, and cultural. In outlining the mechanisms through which music impacts emotions, Juslin and Västfjäll (2008) argue that some of the mechanisms (e.g., entrainment, contagion) are more strongly rooted in biology while others (e.g., episodic memory, musical expectation) are based on learning and cultural meanings. In line with this, musical affect regulation seems to be divided between strategies and mechanisms that focus either on embodiment or reflection (Baltazar & Saarikallio, 2017). That is, body-focused pleasure and repairing strategies that are mostly realized through musical feature-dependent mechanisms (e.g., rhythm, acoustics, contagion) and cognitive, feelings-focused and situational processing strategies that are typically realized through individual-dependent mechanisms (e.g., memories, identification).

The relevance of music in facilitating self-reflective, conceptual understanding of social-emotional experience is also reflected by the fact that the few studies that so far have connected music to general SEC have indeed chosen

to focus on concepts such as emotion recognition (Thompson et al., 2004), emotion comprehension (Schellenberg & Mankarious, 2012), or alexithymia (Theorell et al., 2014). Music's ability to allow embodied levels of experience to be concretized into meaning-making processes makes it a special tool that allows not only deep, experiential access to experiences but also facilitates self-reflective comprehension of them.

### Music as agency—ownership and control of one's experience and behavior

Music has yet another key strength in functioning as a form of social–emotional experience and behaviour: it can easily afford personal choice and ownership. Pioneering work by Even Ruud (1997) connected the health-relevance of music to awareness of feelings, agency, belonging, and meaning, emphasizing music as a forum that allows individuals to be *agentic actors* of their personal health promotion, instead of being medical objects. Christopher Small (1998) introduced the term *musicking* and Tia DeNora (1999) labelled music as a *technology of self*, both laying ground for the shift towards appreciating music users as active meaning-makers and music as a personal resource. The idea of conceptualizing music as a personal resource has been visible in the *uses and gratifications* approach that has been popular in media research on music (e.g., Arnett, 1995). Research on youth development has identified music's ability to provide agency as an important element in adolescents' growth towards independence: music is a forum far enough from adult control to allow personal control, not only over the sound environment but also of the mental content of what to think, how to feel, and what to pay attention to (Laiho, 2004). Recent literature in music cognition has used the term *affordance* to discuss how music functions as a resource for individuals (Krueger, 2018), and music therapy literature has used the terms *musical affordance* and *musical appropriation* to address music as a potential space to allow empowerment in client–therapist power-relations (Rolvsjord, 2006). Within music education, Lucy Green (2008) has built bridges between informal and formal learning by emphasizing the self-directedness of learning, and the concept of *agency* has been discussed recently in terms of democracy in the classroom, with authors stressing the importance of the learner's experience and ability to have a say in their musical learning (Karlsen, 2011; Karlsen & Westerlund, 2011).

Music indeed effortlessly offers possibilities for agency concerning both one's internal emotional experience and social participation. It provides personalization to daily activities through listening choices (Sloboda & O'Neill, 2001), and the pleasure drawn from daily music listening is essentially constituted of feelings of self-determination and empowerment (Saarikallio, Maksimainen, & Randall, 2018). Ruud (1997) suggests that music serves as a daily resource for the sense of agency by providing experiences

of controlling the environment, “being somebody,” and perceiving life as manageable and meaningful. Laiho (2004) emphasizes music as adolescents' playground for training emotional self-control and self-expression. She argues that music allows young people to access deep inner experiences—by surrendering to pleasure-excitement and self-reflectively processing experiences—and yet it allows them to afterwards keep their cool by stating, “it was just a song.” The symbolic quality of music makes it an ideal tool for fluently negotiating one's level of immersion and engagement, operating at an optimal, tolerable window of experiential depth, which allows a sense of self-control and agency concerning internal experience.

Music also provides agency through participation, offering a dialogical space between individuals. This space allows participation in a manner that crosses borders of authority, facilitating agency in particular for those less in power (Karlsen, 2011; Rolvsjord, 2006). A sense of belonging is an integral part of mental health yet is often especially endangered in relation to mental health problems (Hagerty, Lynch-Sauer, Patusky, Bouwsema, & Collier, 1992). Through its ability to promote participation, a sense of unity, and relatedness, music has been considered as a resource for agency and participation in welfare promotion programs (Kruger & Stige, 2015).

The health-relevance of agency in music engagement is perhaps best illustrated in situations where agency is lacking. Persons with a long-term illness seem to appreciate music listening particularly because it provides them an experience of personal empowerment (Batt-Rawden, DeNora, & Ruud, 2005). Individuals also differ in their abilities of establishing agency in music engagement: vulnerable adolescents (receiving support for depression, anxiety, or emotional and behavioral problems) appear relatively unable, in comparison with their healthy peers, to take action for changing, for instance, their maladaptive music use patterns towards more healthy ones (McFerran & Saarikallio, 2014). These depressed young people seem to gain agency for improving their music use patterns only as a result of an intervention that increases their awareness of the impact of music on them (Gold et al., 2017; McFerran & Saarikallio, 2014).

### The access-awareness-agency model of music-based SEC

Based on the discussion above, this study proposes that the special nature of music-based SEC (MuSEC) centers around the access-awareness-agency (AAA) core, which is tied to music's capacity to simultaneously support (a) immersive *access* to the non-verbal, embodied levels of social–emotional experience and behavior; (b) affective *awareness* of that experience and behavior at the level of self-reflective, conceptual understanding; and (c) a sense of *agency*—self-control, ownership and active participation—concerning such social–emotional experience and behavior.

This AAA core is considered to be the essential element of MuSEC, concerning all social–emotional musical behavior, whether the musical behavior involves affective self-regulation, pleasure induction, or social interaction, and whether this takes place in clinical care or everyday contexts.

Use of music for *affect self-regulation*, *positive affect induction*, and *social interaction* represent types of social–emotional behavior in which one can be more or less *competent*. According to the proposed model, competence in each of these behaviors is explained by the presence of access, awareness, and agency. Of the three behaviors mentioned, self-regulation and social interaction can be seen to represent the opposing poles in the individual–social dimension that is present both in music-based models (Bonde, 2011) and in social versus emotional aspects of the SEC literature. *Positive affect induction* can be considered as part of affect self-regulation, but it is mentioned here separately because the experience of positive affect (Juslin & Laukka, 2004; Zentner & Scherer, 2008), strong experiences (Gabrielsson, 2010), flow (Csikszentmihalyi, 2008), pleasure and reward (Blood & Zatorre, 2001), aesthetic enjoyment (Juslin, 2013; Van Den Toll & Edwards, 2014), joy of dancing (Chin & Rickard, 2013), entertainment, strong sensation, revival (Saarikallio, 2008), and relaxation (VanGoethem & Sloboda, 2011) constitute such a prevalent feature of music engagement. Indeed, Groarke and Hogan (2016) recently argued that music is relevant for wellbeing not only through affect regulation and social connection but also through the eudaimonic functions that involve intense positive affectivity through personal meaning and transcendence.

Figure 1 shows the AAA model of MuSEC, which outlines music as a special type of competence, characterized by an inherent interplay of embodied access, reflective awareness, and sense of agency concerning affective self-regulation, positive affect induction, and expressive interaction. Each of the core aspects of MuSEC is further expected to hold particular equivalents in general SEC, and these expected connections are discussed further in the following section.

## How does the AAA model of MuSEC relate to the general SEC? Hypothesized connections

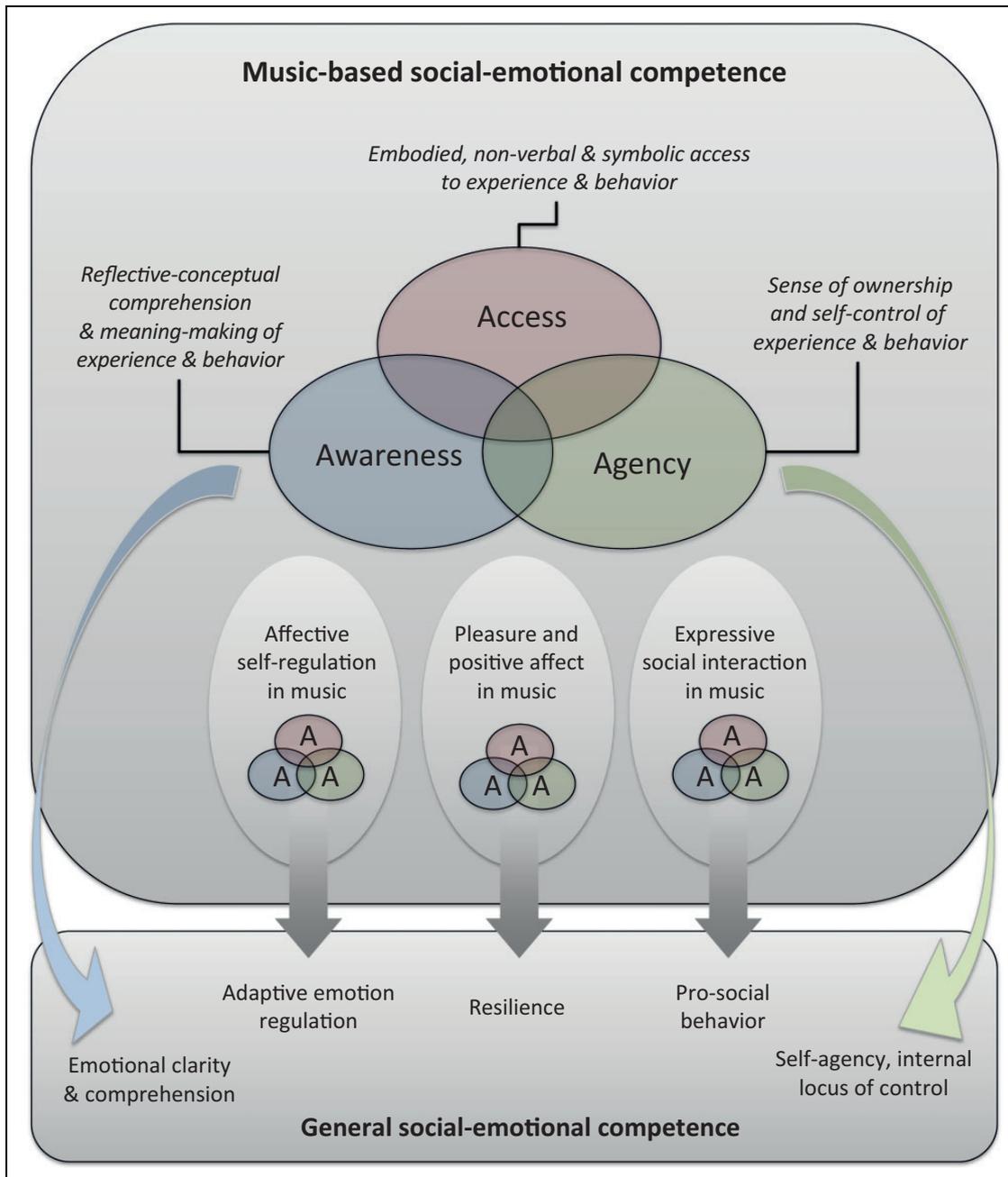
Table 1 lists all of the sub-components of general SEC discussed above according to their closest equivalent among the music-based access, awareness, and agency components. This table does not attempt to provide an exhaustive list of concepts but serves as an illustration of both awareness and agency relating to many concepts in general SEC, although SEC models do not generally verbalize the access component. Why is this? One explanation is that the access component is perhaps usually interwoven into awareness and agency, not identified as a component

of its own. Access is about the non-verbal levels of experience that only become verbal—or audible—in something that affords concrete expression of the nonverbal. Overall, this observation strongly supports the argument that music constitutes a special, symbolic, non-verbal, artistic form of expression and experience and that there is a need for music-based theorizing in order to comprehensively understand the ways that music functions as a forum for the general social–emotional behavior. Access to embodied-symbolic experience is perhaps always present in SEC, but music may provide a specific, tangible voicing for this component.

### *Affective awareness, emotional clarity and comprehension*

The awareness-component of the AAA model has a clear link to the general concepts of affective awareness, clarity and comprehension. In terms of connecting music-based affective awareness to general SEC, it must, however, be first acknowledged that affective awareness is not a unified concept (Boden, Thomson, Dizen, Berenbaum, & Baker, 2013). The literature consists of several related terms, such as *Emotion labeling* (Swinkels & Giuliano, 1995), *Emotional Clarity* (Salovey, Mayer, Goldman, Turvey, & Pal-fai, 1995), and *Emotion Differentiation* (Barrett, Gross, Christensen, & Benvenuto, 2001). Overall, emotional awareness can be considered to consist of at least two facets (Boden & Thompson, 2015, 2016): *attention to emotion* and *comprehension of emotion*, the latter of which can further be separated into *emotion differentiation* (e.g., this is fear, not anger), and *emotional clarity*, the meta-knowledge and understanding of the affective experience (Boden et al., 2013). Multiple well-validated measures for emotional attention and comprehension exist today (e.g., Difficulties in Emotion Regulation Scale (DERS), Gratz & Roemer, 2004; Trait Meta-Mood Scale (TMMS), Salovey et al., 1995; Toronto Alexithymia Scale [TAS], Bagby Parker, & Taylor, 1994), although each focus on slightly different facets of the concept. In terms of health-relevance, it is not so much the attention to but the comprehension of emotion that has been shown to relate to health-relevant skills and outcomes like empathy, prosocial behavior, adaptive coping (Gohm, 2003), positive emotions, self-esteem, satisfaction with social support (Swinkels & Giuliano, 1995), as well as lowered levels of depression, social anxiety, physical symptoms, and cortisol (Salovey, Stroud, Woolery, & Epel, 2002).

In music, the definition of affective awareness as a competence is far from being an established construct. One issue to pay attention to is the theoretical distinction between the emotion expressed in music and the emotion induced by music (Gabrielsson, 2002). Both of these can be seen as emotion comprehension, but as regards the distinction between emotion differentiation and emotion clarity (Boden et al., 2013), one could argue that the



**Figure 1.** The access-awareness-agency (AAA) model of music-based social emotional competence (MuSEC).

ability to discern emotional content from musical expression relates more closely to emotion differentiation, while the ability to comprehend music's affective impact in oneself and in others relates more to the meta-level emotional clarity and self-reflective understanding of the affective experience (see Boden et al., 2013). Recently, Saarikallio (2017) also proposed that competence in recognizing emotion expressed in music essentially relates to emotional communication, serving as a building block for the higher-order competencies in emotional communication and social interaction, while competence in recognizing emotions that music induces in self holds

relevance for developing competence in self-regulatory processing. In sum, it can be argued that further clarification of the music-specific sub-components of the awareness-concept is needed.

#### *Agency, internal locus of control, and self-esteem*

Music's ability to facilitate a *sense of agency* concerning one's social-emotional experience and behavior also links strongly to concepts in general SEC. The concept of agency can be seen as a feeling of being the agent, the one who acts in one's own life: this refers to the subjective awareness of

**Table 1.** General SEC concepts organized according to the AAA components of the MuSEC model.

AAA components	Related concepts in general SEC models
Access	None
Awareness	Perceiving/recognizing emotions, understanding emotions, using emotions to facilitate thought, emotional self-awareness, empathy, social responsibility, awareness of one's own emotions, ability to discern and understand other's emotions, ability to use the vocabulary of emotion and expression, ability to differentiate subjective emotional experience from external emotion expression, awareness of emotional communication within relationships, awareness and identification of sending, receiving and experiencing affect, contextual understanding of sending, receiving and experiencing affect, self-awareness, social awareness, responsible decision-making
Agency	Managing emotions, assertiveness, self-regard, self-actualization, independence, relationship skills, stress tolerance, impulse control, social skills, peer status, relationship success, functional goal-outcome assessment, capacity for empathic involvement, adaptive coping with aversive emotions and distressing circumstances, capacity for emotional self-efficacy, management and regulation of sending, receiving and expressing affect, self-regulation, relationship skills

Note. SEC = social-emotional competence. AAA = access-awareness-agency. MuSEC = Music-based social-emotional competence.

being the person who is initiating, executing, and controlling one's own actions, bodily movement, and thoughts—taking ownership of one's behavior (Jeannerod, 2003). Schaffer (1996, p. 464) defines personal agency as a recognition or understanding that one can be the cause of events, and Ruud (1997) argues that agency is about responsibility for one's life and actions, including self-management, competency, achievement, feeling of mastery, and self-esteem. Agency can be defined as an individual characteristic, a type of personality that contains high degrees of self-esteem, purpose-in-life, internal locus of control, ego strength, self-actualization, and ideological commitment (Côté, 1997). On the other hand it can be understood as part of the development of behavioral regulation (Ford & Thompson, 1985), as *acts* of intentional self-regulation (Lerner, Freund, De Stefanis, & Habermas, 2001). Agency is also always exercised within contextual constraints (Cote & Levine, 2002), as a dialogue of personal capacities and the social structures and cultural factors that both provide support but also place limits on agency. The idea of music as a forum that affords agentic action—whether as self-regulation or participation—resonates well with these views.

In terms of health-relevance, it is important to note the close link between agency and concepts such as internal locus of control (Rotter, 1966) and self-efficacy (Bandura, 1977, 1982), which are relevant for wellbeing (Roddenberry & Renk, 2010) and further relate to experiences of self-esteem (Judge, Erez, Bono, & Thoresen, 2002). Low levels of perceived control, self-efficacy, and competence are shown for instance to correlate with depressive symptoms in youth (Gomez, 1998; Herman-Stahl, & Petersen, 1999; Muris, Schmidt, Lambrich, & Meesters, 2001; Seiffge-Krenke, 2000).

### *The presence of AAA in musical self-regulation, positive affect induction, and social interaction*

The proposed model argues that the AAA components explain competence in a range of musical behaviors from self-regulation to social interaction, and competence in these behaviors further relates to health and wellbeing. Affective self-regulation, positive affect induction, and social interaction each have their distinct equivalents in terms of health and wellbeing outcomes.

In terms of general affect regulation, the literature makes a distinction between efficient strategies (e.g., distraction, reappraisal) that buffer against stressors (Seiffge-Krenke, 1995) and prevent depression (Catanzaro, 2000; Garnefski, Teerds, Kraaij, Legerstee, & Van den Kommer, 2004; Gross & John, 2003; Oikawa, 2002), and inefficient strategies (e.g., suppression, venting, rumination) that relate to depression (Galaif, Sussman, Chou, & Wills, 2003; Garnefski et al., 2004; Gross & John, 2003; Salovey, Bedell, Detweiler, & Mayer, 1999) and drug abuse (McCubbin, Needle, & Wilson, 1985).

The awareness-component of MuSEC has clear links to reappraisal, which is considered an efficient strategy, while musical strategies relying on embodiment have links to distraction, another efficient strategy (Baltazar & Saarikallio, 2017). Relevance of agency is also prevalent in self-regulation because the health-relevance of the listening experience is often dependent on whether the person is *aware* and *in charge of*, the related psychological *impact* (McFerran & Saarikallio, 2014). The older people get, the better they seem to master a musical “toolkit,” a selection of songs that help them in range of purposes from solace to housework boosting (Saarikallio, 2011), which implies that awareness and agency of self-regulatory music use can be learned. In line with this, recent intervention programs that have targeted young people's awareness of the emotional impact of music and their personal agency in employing music for the desired affect-regulatory outcomes have shown that training such competence in music has beneficial effects also on general emotion regulation skills (Dingle, Hodges, & Kunder, 2016) and mental health scores (Gold et al., 2017).

The ability to induce pleasure and positive emotion is a competence of its own: positive emotions broaden people's

thought-action repertoire and build resilience (Fredrickson, 2001), improve achievement (Lyubomirsky, King, & Diener, 2005), and directly impact physiology through the endocrine system (Hefferon, 2013). The mere experience of positive versus negative moods has been shown to relate to improved coping and wellbeing (Fredrickson, 2000; Gohm, 2003; Pinto, Kreipe, & McCoy, 1997) and happiness, defined as pleasure, engagement, and meaning, is a significant predictor of life satisfaction (Peterson, Park, & Seligman, 2005). The ability to use music for positive affect induction can be expected to relate to known associates of general positive affect such as resilience (Fredrickson, 2001; ) and life satisfaction (Peterson et al., 2005). Affect self-regulation and positive affect induction can be seen as opposing sides of the same coin: access, awareness, and agency in using music to self-regulate negative, depressive, and aggressive moods may help their clarification, release, and active processing towards solution-orientation and improved coping, while access, awareness, and agency in savoring the beautiful shades of positive affects in music might allow enriching and thought-broadening resources for resilience, emotional stability, enjoyment, and satisfaction with life.

Finally, competence in using music for social interaction evidently relates to general social skills and a sense of belonging. The fundamental human need to belong, feel participation, and be accepted by social groups has been discussed already by Maslow (1943). The holistic combination of access, awareness, and agency in music makes musicking a toolkit that is able to facilitate prosocial behavior through a variety of mechanisms, from embodied entrainment to empathic perspective taking and joint intentionality (Davis, 1980; Rabinowitch et al., 2013; Wöllner, 2012).

## Discussion

This article proposed a model of music-based social-emotional competence. Music engagement was approached from the perspective of SEC, which meant that the social-emotional impact of music on people was not considered as something that is intrinsically always beneficial, but dependent on the individuals' competence in using music. The concepts of access, awareness, and agency were introduced as the core factors for explaining when and how social-emotional engagement in music is competent and health-beneficial. It was further argued that differences in competence are to be observed in the use of music for affective self-regulation, in the use of music for positive affect induction, and in the use of music for social interaction. The AAA components were proposed as illustrative of higher competence in each of these behaviors. Competence in each of the musical behaviours was further expected to predict particular outcomes relevant for health and wellbeing.

Based on the proposed model, the following hypotheses for future empirical testing can be outlined:

The first set of hypotheses addresses positive correlations between musical and general awareness and agency:

**H1:** The level of awareness—reflective comprehension and meaning-making—of the social-emotional aspects of one's musicking is expected to show positive correlation with the level of social-emotional awareness in general.

**H2:** The level of agency—the sense of self-control and ownership—of the social-emotional aspects of one's musicking is expected to show positive correlation with the level of general self-agency, internal locus of control, self-esteem, and self-efficacy

Here, it is important to note that the social-emotional aspects of one's musicking contain a variety of experiences and behaviors. As discussed in relation to affective awareness, it may, for instance, be necessary to differentiate between emotion recognition *in musical expression* and the emotion recognition of the *experiences induced by music* and test their particular equivalents in general emotion recognition and general emotional comprehension. The elaboration of these concepts needs more future research. Prior instruments in the general SEC literature could inform ways to operationalize the emerging music-based conceptual understanding into measurement scales (e.g., the Trait Meta-Mood Scale for assessing emotional attention, discrimination, and regulation Salovey et al., 1995).

The second set of hypotheses addresses the role of access, awareness, and agency as the mechanisms of action that explain when the use of music for affect self-regulation, positive affect induction, and social interaction is adaptive and health-beneficial:

**H3:** The use of music for affect self-regulation is hypothesized to be positively correlated with generally competent/adaptive affect self-regulation, particularly when combined with high levels of access, awareness, or agency in musicking.

**H4:** The use of music for positive emotion induction is hypothesized to be positively correlated with general resilience and life satisfaction, particularly when combined with high levels of access, awareness, or agency in musicking.

**H5:** The use of music for social interaction is hypothesized to be positively correlated with general pro-social behavior and sense of belonging, particularly when combined with high levels of access, awareness, or agency in musicking.

Each of the AAA components is generally considered to play a role in making musicking health-beneficial. However, the question remains as to whether each and every one of the AAA components has to be present for musicking to

be adaptive/health-beneficial for each of the musical behaviors listed. Some components may hold stronger weight in explaining certain outcomes, and future research could test the comparative relevance of the access, awareness, and agency components in the particular contexts of different musicking behaviors.

Overall, in addition to hypothesizing correlational connections, it would also be important to test the causal relationships about whether increasing music-based access, awareness, and agency impacts general access, awareness, and agency. For instance, the study by Thompson et al. (2004) is a good example of testing whether music training impacts general emotion recognition (recognition of anger and fear in speech prosody), but future research should elaborate further in designing and assessing the impact mechanisms of such interventions. The proposed model encourages future research to avoid black-box thinking in addressing the connections between musicking and general SEC, and instead advocates for elaborating on the components of music-based SEC as the hypothesized impact mechanisms.

This article adopts a resource-oriented view of music, considering music fundamentally as a social–emotional act, a behavior that simultaneously functions as a manifestation of one’s social–emotional competence and also as a potential forum for expanding that competence. Music holds instrumental value in serving the social–emotional needs of an individual but also functions as a transformative power in reconfiguring the person’s experience and behavior. In line with DeNora’s (1999) thoughts about music as a “magic mirror” or Krueger’s (2011) ideas about music as a “beyond-the-head resource,” the conceptualization of music as SEC considers music as a companion, a dialogical material that allows individuals to extend their current competence to discover new expanded competence. The proposed model for MuSEC does not subscribe to trait-based conceptualizations of SEC but emphasizes musicking as an affordance for growth, learning, and self-improvement.

The proposed AAA model of MuSEC holds great resemblance to models of general SEC. Awareness and agency represent the opposing poles of a dimension that spans from *comprehension* to *action*. The musicking behaviors, from self-regulation to social interaction, line up with the *individual–social* dimension. These are neither new nor music-specific articulations. The clearest special feature of the model is the pronounced role of the nonverbal-embodied-symbolic *access* to experience and behavior, which, as discussed above, perhaps relates to the special character of music as a forum for serving as a concrete expression of such levels of human experience. It is also noteworthy that the reason positive affect induction has been treated as a distinct feature, separate from affect self-regulation, is grounded in music inherently being a form of art, entertainment, and part of human aesthetic behavior. In many ways, music shares these two affordances with other creative arts,

with the embodiment aspect being particularly comparable with dance. On these grounds one could argue that the proposed model is not restricted to music only but could actually be the access-awareness-agency model of art-based social–emotional competence. Opening a dialogue on this matter with research on dance, theatre, film, visual arts and literature would be of wide relevance.

It can also be argued that the fact that general SEC models typically do not address the *access* component is a reflection of a broader cognitive orientation or bias in research on intelligence and competence. Embodiment, creativity, or ability for symbolic expression have perhaps not received the attention they deserve as ingredients of social–emotional competence. This line of argumentation may be relevant for politics in education and health-care, because it relates to fundamental questions about what is human competence, intelligence, wisdom, growth, even mental health—how relevant is the embodied-symbolic level of experience for competence in general?

As regards the applied relevance, the proposed model may help the design, implementation, and validity testing of various intervention programs in health promotion and education contexts. Many general social–emotional competence promotion programs today such as Papilio from Germany, or PATHS (Promoting Alternative Thinking Strategies), Incredible years, and the Head start REDI (Research-based, Developmentally-informed) program from the USA utilize musical activities as their ingredients, but art-based programs have been criticized for having insufficient theoretical grounding on scientific knowledge about the underlying impact mechanisms (Clarke et al., 2015). The proposed AAA model of MuSEC could support the design and validation of such programs, particularly in elaborating on the impact mechanisms, which could help in choosing musical activities that would best match with the desired outcomes in the general SEC side.

The obvious limitation of the proposed AAA model of MuSEC is that it is a preliminary theoretical frame that critically calls for further elaboration and validation through empirical testing. Even so, as such the model provides a functional theoretical framework for conceptualizing music engagement as a psychological health resource. The model brings conceptual coherence to the scattered literature on musical self-regulation, music as entertainment, and music as social interaction by introducing the AAA components as a unifying core for each of these behaviors. Also, by defining all of these behaviors as social–emotional competencies, this article frames music engagement as an integral (albeit, special) part of the general social–emotional growth, learning and wellbeing.

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