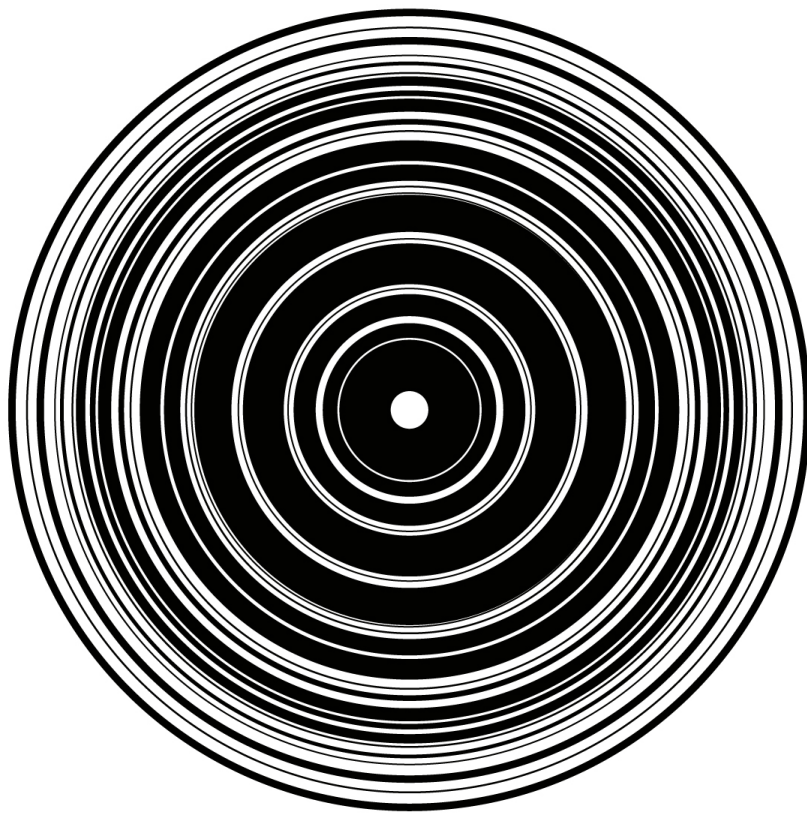




DIGITAL AUDIO WORKSTATIONS IN MUSIC THERAPY:



**An interpretivist study of how music therapists in a mental
health setting experience working with digital audio
workstations.**

Abstract

The use of digital audio workstations (DAW) in music therapy is has been little researched. This interpretivist study explores how music therapist in a mental health setting experience the use of DAWs in their praxis. The aim of the study was to give praxis accounts of using DAW in therapeutic contexts, for the benefit of other music therapists DAWs, and contribute to the discourse on music therapy and music technology. The empirical data material was collected through four semi-structured interpretivist interviews and analysed using a hermeneutic approach and social constructivist perspective toward epistemology. Findings were categorised into four major themes: 1) a structuring resource, 2) aesthetic experience, 3) using clients strength and resources and, 4) making things and connectedness. The findings suggest that therapeutic goals such as agency, empowerment and mutual collaboration and constructing positive identities are facilitated and reinforced by creative processes using DAWs. Significant findings were discussed in relation to other research on music therapy and DAWs and relevant humanistic theory surrounding the field of mental health and mental health recovery.

Keywords: music therapy, mental health, digital audio workstation, music technology, empowerment, agency, identity, humanistic.

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1. Introduction

This thesis will investigate how music therapist experience working with a digital audio workstation (DAW) in a mental health setting.

1.1 Personal Background

Growing up during what can describe as a technological revolution as a *digital native* with parents described as *digital immigrants* my "mother tongue" is the language of the digital language of computers, video games and the internet (Prensky, 2001, p. 2). This study is written from the position of a *digital native* with all the intrinsic insights, curiosities and biases toward the narrative of technology that comes with it.

Initially, my first experience with using a DAW — *Logic Pro*, a popular DAW software released by Apple in 2008 — align with my early onset toward pursuing a career with music. At the time, I used it mostly for recording and producing ideas for compositions. I remember finding it much like a virtual tape recorder that I had as a kid, in which most of the editing tools one would expect from a word processing programs like *Word* or *Pages* were present and at your fingertips. In the present time, DAWs are prime in most of my creative music-making processes. Furthermore, with the increased processing power of laptops today, DAWs also appear as an instrument on stage during my live performances, making it a vital part of my daily ecology of instruments which I use both as a musician and as a music therapy student. Over and above, the DAWs available today has developed into an instrument with integrated and flexible software instrumentality, allowing an almost indefinite range of possibilities for the user.

In recent time, my initial encounter with DAWs in a music therapy context was through my final praxis as a music therapist in a mental health setting. At this particular mental health hospital, most of the therapeutical processes systematically encompassed using the DAW or at least a computer with music software, in one way or another. Observations from this praxis period demonstrated the instrumentality provided by DAWs as prominent in all four main forms of music experiences — improvisation, re-creating (performing), composing and listening — as described by Kenneth Bruscia in his book *Defining Music Therapy* (Bruscia,

2014). Moreover, another observation, during the recruitment of the period of the praxis I attended meetings with interdisciplinary teams of mental health professionals — psychologist, psychiatrists, specialised nurses, doctors, music therapists, and physiotherapist etc. — where we discussed the recovery processes, I was made aware that most of the clients who attended music therapy and where prioritised for music therapy in mental health hospitals in Norway are in fact *digital natives*, in terms described by the mental health professionals I worked with young adults between 18 and 30 years of age. This stirred up a series of reflections succeeding my observations in clinical practice resulted in developing formulations that eventually raised the question of which was the creative spark for this thesis: In what way does music therapy's relationship to music technology influence how we are able to attune to the aesthetic identities of future clients in a mental health setting?

1.2 Academic Background: Towards a Research Question

The academic context for this thesis revolves around how music therapy is interconnected to an interdisciplinary field of theory relating to music therapy and technology. First, I will outline a short history of music therapy, and music technology to explain why pursuing a thesis on this topic is interesting. Finally, I will try to relate this to how using music technology in music therapy also related to a bigger context of contemporary music and global culture.

1.2.1 Music Technology in Music Therapy

The discussion of DAWs in music therapy should be considered as part of a larger discourse of technology in music therapy.

Discussion about integrating music technologies in music therapy can be dated back to publications by Krout & Mason (1988) and Nagler & Lee (1987) in the late half of the 1980s, and Krout (1994) in the early half of the 1990s. Early literature on music technologies in music therapy focused on recommendations of technologies and their benefits in music therapy. Other more recent publications emphasise an increase in different perspectives on music technology in music therapy. These perspectives include surveys of practice (Hahna et al, 2012; Magee, 2006), accounts of use with various client groups across life span (Knight &

Krout, 2016; Knight & Lagasse, 2012; Magee & Burland 2008a, Magee & Burland, 2008b; Magee et al., 2011) and accounts of equipment typologies and resources aimed at informing or guiding music therapy practice (Crooke, 2018; Crooke & McFerrand, 2018; Knight, 2013; Knight & Krout, 2016; Knight & Lagasse, 2014; Magee, 2014; Magee & Burland, 2008a, 2008b; Misjé, 2013; Noone, 2018; Smith, 2012; Viega, 2018).

Technology is sometimes overlooked by psychologist and therapist on the basis of prejudice and emphasis on the relational aspect. Technology can, at worst, be an object that is alienating or distracting or obstructing the therapeutic relation (Chou et al. 2017). This is further reflected in the music therapy literature. Streeter (2007) poses the question of if music therapy and technology might be an unhappy marriage. Magee and Burland investigated how music therapist uses music technologies therapist (Magee 2006; Magee & Burland, 2008a, 2008b). These studies suggest that the limitations of acoustical instruments are met by the benefits of music technologies (Magee & Burland, 2008a, p. 7). Benefits of using technologies suggested as a 'pallet of opportunities' such as supporting the therapist to meet the client in an improved way, extending an expanded scope of work, and facilitating collaboration with others. However, music therapist still reported a preference for acoustical instruments due to their aesthetic qualities, especially linked to visual appearance and "a sense of embodiment of the sound created". This, in turn, was considered a factor in limiting the client's possibilities for experiencing music as an embodied phenomenon (p. 11). Challenges of music technology and corporeality are also reported in other papers (Beneviste et al., 2009). Other reasons included the risk of technical problems, overstimulating and unnecessarily complex music, some cited the 'pallet of opportunities' as a limitation. Hahna et al. (2012) similarly point towards findings that music therapist favour acoustical instruments, although most of the informants admittedly used some kind of musical technologies. Reasons for not using music technologies in music therapy included: lack of money, lack of training, a perception that music technologies are inappropriate for music therapy, lack of time to learn, lack of portability, lack of facility and no interest (p. 460). Also pointing toward further prejudicial positions among music therapist "stated that music technology is limited in terms of musicality. Based upon these concerns, it seems reasonable to extrapolate that some music therapists see digital music as a lesser form of music, or as 'not' music at all" (Hahna et al., p. 462). However, these perceptions should be seen in the context of a general lack of training (Hahna et al., 2012;

Magee & Burland, 2008a, 2008b).

Crooke (2018) argue that the perception that music-making with music technology is less authentic and inferior to acoustic instruments can be read from a critical review of the music therapy literature. This argument is based on that "most visible rationale in existing scholarship for working with music technology is that it can augment the musical experiences of clients who cannot fully access acoustic instruments" (p. 2). This is reflected in literature where technology is used as an assistive device to support music-making for people with lower physical functioning, i.e. older adults or people with mental or physical disabilities (Knight & Krout, 2016; Magee et al., 2011; Magee, 2014; Noone, 2018; Owenby, 2015; Weissberger, 2014). Despite the continued lack of training uses of music technologies in music therapy seems to be on the uprise (Hahna et al. 2012; Magee, 2014).

To sum up, the exigencies for a continued search knowledge of music technologies can be read both explicitly and implicitly through academic music therapy literature. This thesis attempts to address this request.

1.2.2 Music Technology, Contemporary Music and Global Cultures

Music technology has played a central role in both contemporary music during the last century (Holmes, 2012; Manning, 2004; Taylor, 2001; Théberge, 2001). Hence, "the idea that music technology remains less relevant than acoustic-only music-making in therapy appear most dissonant in the context of contemporary music cultures" (Crooke, 2018, p. 3). Théberge (2001) argues that "any discussion of the role of technology in popular music should begin with a simple premise: without electronic technology, popular music in the twenty-first century is unthinkable" (p. 3). The development and evolution of music technologies are intrinsically linked to the contemporary music industry and plays a decisive role in recording, post-production and dissemination (Taylor, 2001). Further, the technological evolution of musical instruments such as samplers, sequencers, synthesisers and drum machine accompany cultural production as a catalyst for musical change (Théberge, 2001). Thus "the specific uses, abuses, or the explicit rejection of various technologies are [...] instrumental in defining a particular 'sound' (Théberge, 2001, p. 4). During the 1960s, the development of recording technology caused a paradigm shift in the creative process of music-making. Before the

1960s, the general premise for going into a recording studio was to "reproduce the sound of a live performance as accurately as possible" (p. 41). However, after the 1960s "as studio technology developed to a point where musicians could create sounds in the studio that they could not possible create live (such as playing a guitar solo backwards), the roles where reversed, and the studio recording became the ideal to which live music aspired" (p. 41).

Neill (2002) argue that we are moving toward a new global cultural architecture "in which art is becoming more connected with society rather than being created by and for specialists" (p. 3). By comparing 'democratising' of cultural production to the demise of classical music, this is linked to and accelerated by "the rapid evolution of new technologies for producing and reproducing music today, as well as by new possibilities for distribution and dissemination of music electronically" (p. 3). This is related to a cultural shift in the democratisation of production, knowledge, and distribution and promotion.

Strachan (2017) describes the democratisation of production in terms of "increased participation and access, a decentralisation in terms of media organisations and technologies, equality in levels of reward and status for participants and the emergence of innovative and diverse forms of expression" (p. 22). New music and internet technologies have increased participation and access through decreasing gap of audio quality or fidelity between technologies aimed at professional and amateur music production, consumer-targeted software and hardware technologies have become increasingly sophisticated, and the availability of dissemination through internet technologies is widespread (pp. 22-23). Deskilling is another important factor in this cultural shift. The process of studio recording and composing have been simplified by digital technologies. Also, access to information related to learning skills and techniques required is less privileged (Strachan, 2017, p. 26).

Moreover, the aligning development of technology and culture is closely related to communities utilising the technologies. The sonic and cultural vocabulary, the composition techniques and aesthetic of musical expression that we use today are developed in communities exploring technologies on the fringe of mainstream society (Crooke, 2018). This development can be related to a view of technology as an "environment in which we experience and think about music" (Théberge, 2001, p. 3). An early example of this is the development in avant-gardism communities surrounding *music concrète* by Pierre Schaffer

who developed compositional techniques exploring radio broadcasting equipment, turntables, mixers, microphones and later tape loops (Holmes, 2012). Other examples include developments in oppressed or communities. Different genres of electronic music and DJ culture evolved from the queer communities surrounding clubs in New York in 1970s and 1980s (Buckland, 2002). About the same time, Hip-Hop communities and the development of beat making culture is perhaps the most influential account of music technologies influence on global culture. Still today, we find these peripheral communities connected with the development of technology and culture (Crooke, 2018; Lightstone, 2012). The growth in do-it-yourself (DIY) communities can be seen as another important part of this counter-culture related to technological development. DIY communities have become increasingly knowledgeable through sharing information online and through workshops (Richards, 2013). These communities are constantly redefining the borders between 'machine' and 'musical instrument' continually shaping the aesthetics of contemporary music today (Crooke, 2018).

As a consequence of this development in music technology, contemporary music and global culture, "the cultural and artistic labour of these communities has had a profound impact on our world" (Crooke, 2018, p, 3). Hence, devaluing technology and the music, communities and cultures that surround it seems counterintuitive to music therapy on several levels. It suggests being out "out of touch" with what constitutes music in our current world. Furthermore, risking disconnecting with younger generations, perpetuating dominant narratives around musical excellence and cultural elitism. This will merely marginalise the increasing communities and cultures who make use of music technologies (Crooke, 2018, p. 3). Linking the perspectives of Ruud (1998) and Stige (2002), who argue that music therapy and culture are inseparable, to the perspective of Théberge (2001) who argue that music technology and culture are inseparable, sums up the premise in favour of further investigating these themes in relation to each other.

1.2 Research Question

My research question is formulated as the following:

How do music therapists in a mental health setting experience working with DAWs?

In the further, I will divide my research question into five areas of focus. These areas serve as a point of departures for, the narratives and accounts of the informants to the study, and, my further exploration of these themes during the discussion in chapter 5. The present study aims to investigate and explore: 1) *how the informants define DAWs*, 2) *how the informants use DAWs* 3), *why the informants are using DAWs*, 4) *how the informants are thinking about DAWs in relation mental health practice*, and 5) *how the informants are thinking about DAWs in general*.

1.3 Important Terminology Defined

So what is a DAW? Is it an instrument or a production tool, or both and more? Furthermore, what is music therapy, and how does it work in a mental health setting/context? Before setting out, and in order to avoid confusion, I will elaborate some of the important concepts and terminology and how they're applied through this thesis.

1.3.1 Digital Audio Workstation

The definition of DAW is not straightforward and belongs to a broader context and history of instrumentality in contemporary music. I will, therefore, begin with a giving a necessarily brief account of the DAWs etymology and history before moving to definitions

The origin of DAWs belongs to the history repetitive audio technologies. The etymology of DAWs can sometimes be seen in their visual design. Strachan (2017) points out that "'mainstream' computer-based DAWs such as Pro Tools, Cubase Sonar, Logic, Ableton Live and FL studio have their roots in the recording, synthesis and sequencing hardware" (p. 60). As a consequence, DAW software often have isomorphic designs referencing these hardware technologies. DAWs and other recording, synthesis, and sequencing are repetitive audio technologies. Levaux (2017) dates the history of repetitive audio technologies back to mechanical instruments of the middle of the 9th century. During the 9th century, the Banū Mūsā brothers from Baghdad designed an automatic flute, described in the *Book of Ingenious Devices*, which is literally translated into 'book of tricks'. The Banū Mūsā automatic hydraulic flute is described as an "automatic flute player which could reproduce an audio sequence. The basis of this machine's automatism was hydraulic pressure, generated by flowing water in a reservoir. The flute's melody was encoded on rotating cylindrical drums by way of raised pins which activated levers to open or close the flute's holes" (p. 188). Similarly, Athanasius Kircher designed an automatic hydraulic organ which marks the first Western European repetitive audio technology (p. 188). More recently, however, repetitive audio technologies are often referenced to Pierre Schaffer accidentally discovered looping in 1948 through the presence of dust and scratches on a vinyl gramophone record (Levaux, 2017, p.187; Holmes, 2012). Schaffer noticed that dust and scratches, usually perceived in audio clicks, also resulted in the needle skipping back to a previous position (Levaux, p. 187). Early repetitive

audio devices can in this regard be considered reinventions of the wheel clearing the way for the loop-based techniques of modern sequencers and DAWs.

In Grove Music Online encyclopaedia, Case (2014) offers a definition of the DAW:

A DAW comprises a combination of computer hardware and software used for the computer-based creation of recorded music through multitrack production. It typically consists of a multitrack recorder, a mixer, and a diversity of signal processors, such as faders, pan pots, equalisers, compressors, delays, and reverbs. The DAW unites within a desktop or laptop computer the full functionality that the analog recording studio offers across many separate components, including tape machines, mixing consoles, and effects devices.

While the DAW possesses all of the essential functional capabilities of a stand-alone recording studio entirely within the computer environment, it generally permits interfacing with additional tools. Third-party software called plug-ins may be incorporated into the DAW through industry standard protocols. This enables the DAW to leverage the features and qualities of different tools from a variety of software developers. On the one hand, audio interfaces possessing digital-to-analog converters enable the audio to leave the DAW platform and have the benefit of any available external, outboard analog signal processors. On the other hand, analog-to-digital converters return analog-processed audio back into the DAW. In this way, the DAW takes advantage of both new and legacy analog recording studio devices, providing the user the best of both worlds, analog and digital.

By digitally processing audio, the sound recorder can step away from a specialised world of proprietary analog devices and step into the broader market of computer-based digital signal processing. As a result, the recording studio is now easily and affordably available, and progress and innovations occur at the aggressive pace of the digital economy. Such democratisation opens the field of sound recording to novice enthusiasts and musicians, while delivering differentiated results for the practiced audio engineer. Perhaps the most important feature of the DAW is that entirely new,

previously unrealisable algorithms for processing sound are now possible, with new forms of audio creation and processing always on the horizon. The DAW-based multitrack production paradigm has had a major impact on how recorded music is created, who creates it, and the quality of the art that results (Case, 2014).

Another definition is offered by Strachan (2017) in his book *Sonic Technologies: Popular Music, Digital Culture and the Creative Process*.

DAWs are all-in-one applications, installed on computers, which provide a visual interface and collection of functions whereby recording, sound generation, editing and mixing are able to be undertaken within a singular virtual environment. [...] External instruments and microphones can be connected to the DAW (usually via a separate audio interface or sound card) whereby audio can be recorded to the computer's hard drive. Sounds can be generated through the use of built-in or third-party 'virtual instruments' such as synthesisers and drum machines. Musical structures can be sequenced and edited through the arrangements of MIDI information and final mixes (whereby the levels of instrumentation are appropriately balanced) can be completed (pp. 7-8).

Both definitions provided by Case (2014) and Strachan (2017) are quite open-ended. However, emphasises the strengths and potentials of DAWs as both stand-alone and interfacing hardware and software devices. Another important part of the definition is. DAWs and digital audio processing (DSP) have made "sonic material more reusable, malleable and open for transformation" (p. 5). Katz (2004), in a quote celebrated by Strachan, further argues that the transformative nature of digital sampling has preceded to "transform the very art of composition" (Strachan, 2017, p. 5).

1.3.2 Music Therapy

"Music therapy is a blend of art and science, medicine, and the humanities" (Ruud, 1998, p. 19). As a result, the task defining music therapy can be an elusive one. Moreover, the splicing of *music* and *therapy* necessitates the integration of two paradoxical terminologies. On the one hand, music, "as an art, it is concerned with subjectivity, individuality, creativity and

beauty." On the other and, therapy, "as a science, it is concerned with objectivity, universality, replicability, and truth" (Bruscia, 2014, p. 11). Other caveats of defining music therapy are a consequence of the interdisciplinary ontology of music therapy. As subjects, music and therapy subsume and overlap with a wide range of other subjects, i.e. art, health, medicine, education, psychology etc., and theoretical fields, i.e. philosophy, psychology, sociology, medicine, anthropology, musicology, and so on. As a result, music therapy research applies methods from any of the art science, and humanities (p. 10).

The concept of music was traditionally held by musicology to be an autonomous object. This notion is rooted in formalism and positivism. However, music as an autonomous object is problematic to understanding music therapy processes since it easily can lead to a mechanical, stimulus-response perception of music therapy (Rolvsjord, 2010). In response to this, Small (1998) coined the term *musicking*. Small (1998) argues against the perception of music as an autonomous object by changing the word "music" into a verb and thus suggesting that "music is a figment, an abstraction of the action". Small proceeds to define musicking.

Musicking is to take part, in any capacity in a musical performance, whether by performing, by listening, by rehearsing or practising, by providing material for performance (what is called composing), or dancing (Small, 1998, p. 9).

Thus, Small (1998) reverses the relationship between a performance and a musical work is reversed, "performance does not exist in order to present musical works, but rather, musical works exist in order to give performers something to perform" (Small, 1998, p. 8). Both music and health can, in this perspective, be viewed as a performance. The performative or agentive aspect relates to perhaps the most open-ended definition of music therapy. Ruud (1990) definition of music therapy as an effort to "use music to give the client new possibilities for action" (as cited in Ruud 1998, p. 52). Ruud definition is rooted in anthropology and humanism. Ansdell (1995), another author who argues against formalism, describe how the qualities of music changed meaning during the move from "old" to "new" musicology. Ansdell describe six transformations of music; 1) "as a process rather than a structure, 2) as something intimately tied human affect and meaning, 3) as participatory and inherently social, 4) as determined by culture and context, 5) as performed improvised and live as well as notated and reproduced, and, 6) as personal, embodied and deeply human" (as quoted in

Ruud, 2000, p. 2). The concept of health as performance relates to Ruud's (2012, 2013) theory of *cultural immunogen*, which holds that there exist an immunogenic potential in performing art, music and culture and DeNoras (1999, 2000, 2007) Foucaultian theory of music as a technology of the self. DeNora argues that music is a health resource which can:

[...] help actors to shift mood or energy level, as perceived situations dictate, or as part of the 'care of self' [...] music is an accomplice in attaining, enhancing and maintaining desired states of feeling and bodily energy (e.g. relaxation); it is a vehicle they use to move out of dispreferred states (e.g. stress, fatigue). It is a resource for modulating and structuring the parameters of aesthetic agency - feeling, motivation, desire compoment, action style, energy (DeNora, 1999, p. 37).

DeNora further introduces two social psychological terms, borrowed from Gibson (1966) *affordances* and *appropriations*. A musical activity can *afford* health, or well-being, the effect depending on how persons *appropriate* it in a context. Health musicking is thus defined as "appraisal and appropriation of the health affordances of arena, agenda, agents, activities and artefacts of a music practice" (Stige & Aarø, 2012, p. 132). Stige's (2012) definition of *Community Music Therapy* is inspired by these modern perspectives from musicology and sociology (DeNora, 1999, 2000; Ruud, 2000; Small, 1998). Stige (2012) emphasise the social aspects of humanity in the definition of community music therapy.

[Community music therapy] is a situated health musicking in a community, as a planned process of collaboration between client and therapist with a specific focus on promotion of sociocultural and communal change through a participatory approach where music as ecology of performed relationships is used in a nonclinical and inclusive setting. (Stige, 2012, as quoted in Solli 2014, p. 16)

One of the most cited definition is credited to Bruscia (2014) who writes:

Music therapy is a reflexive process wherein the therapist helps the client to optimise the client's health, using various facets of music experience and the relationships formed through them as the impetus for change. As defined here, music therapy is the

professional practice component of the discipline, which informs and is informed by theory and research (p. 36).

Bruscia's famous definition earlier attempt to formulate a definition this definition included "achieving health", which was later changed to "optimising health". This marks a change from emphasising health as an either-or phenomenon to health as a continuum of processes. This can be understood as a humanistic turn in music therapy, moving away from positivism and homeostasis to a salutogenic rather than a pathogenic perspective on health (Antonovsky, 1996; Bruscia, 2014). The World Health Organisation (WHO), defines health as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" (WHO, 2004, p. 10). And mental health as "a state of well-being in which the individual realises his or her own abilities, can cope with normal stress of life, can work productively and fruitfully, and is able to contribute to his or her community" (WHO, 2004, p. 10). The WHO definition distinguishes between mental health and mental illness, thus emphasise promoting individual well-being, agency and autonomy opposed to curing illness. This relates to Ruud (2010) who emphasises health as a subjective concept rooted in culture. Instead of looking for an objective definition of health, we see how health can be seen as a category of experience which reveals some of our unspoken suppositions about human and social realities. When we speak about health, we give expression to our culture's view of what is meant by well-being and life quality. Health is, in this sense, a keyword, a productive or generative concept, and a value that is added to other values important to us (Ruud, 2010, p. 104).

In summary, these concept of *musicking*, *health* and *well-being*, *affordances* and *appropriations* provide a theoretical foundation for understanding humanistic music therapy in a mental health setting as we are moving from the pathogenic or illness dominated perspective referred to as the *medical model* and toward more contextual models in mental health practice (Rolvsjord & Stige, 2015; Wampold & Imel, 2015). Further theoretical perspectives on mental health practice will be accounted for in the final part of Chapter 2.

2. Literature Review

The title suggests that the main themes of this thesis are: *music therapy, music technology, and mental health setting*.

The information was accumulated doing digital searches for relevant literature in databases: Medline, PsychINFO, EMBASE, ERIC, Cochrane Library, Social Science Citation Index, Proquest Dissertation, SCIE, World Cat, RILM and JSTOR. Additional searches were conducted in the University of Bergen's library search engine Oria and Google Scholar. I used different constructions and variations of the keywords: (music therap*, OR mental health, music AND technolog*, music technolog*, electronic* technolog*, electronic* music technolog*, studio, computer studio, recording studio, digital studio, digital technolog*, beat-making technolog*, music technolog*, loop-based technolog*, sampler*, sequencer*, digital audio workstation*, garageband, logic pro, logic x, cubase, pro tools, ableton live). Furthermore, manual searches were conducted in the library and in the literature references. The vast array of keywords applied to the searches was applied as a method to cover a wider amount of literature. Also, I found that "DAW" as terminology in music therapy sustained few references when conducting searches. The term "digital audio workstation" or "DAW" were referenced merely four times: in Crooke and McFerrand (2018), Crooke (2018) and Noone (2018). A total of 10 references were included.

2.1 The Role of DAWs in Music Therapy Literature

Examining the scholarly literature of music therapy there are an increasing amount of literature which focus on DAWs in music therapy (Crooke, 2018; Crooke & McFerran 2018; Knight, 2013; Kolstad, 2008; Noone, 2018; Sadovnik, 2014; Street, 2014; Solli, 2015; Viega, 2018; Weissberger, 2014). Focus on different client groups vary from children and adolescents in child protective services or in mental health settings (Crooke & McFerran, 2018; Kolstad, 2008), adults in rehabilitation context (Street, 2014), adults in mental health setting (Sadovnik 2014; Solli, 2015), and older adults (Weissberger, 2014). While some authors had the main perspective on music technologies, (Crooke, 2018; Crooke & McFerran), other authors concerned with music therapy and theoretical approaches in mental health citing processes involving music technologies more indirectly in describing the processes of recording,

producing and mixing a CD (Solli, 2015). Of the authors mainly preoccupied with music technology some were explicitly mainly concerned with DAWs as main theme (Kolstad, 2008; Noone, 2018; Street, 2014; Sadnovik, 2014; Weisberger, 2014), while others were interested in DAW as a part of a larger beat making ecology of equipment in music therapy (Crooke, 2018; Crooke & McFerran, 2018), or mainly the outcome of the therapeutic process relating to DAWs (Solli, 2015). While most authors wrote about an entry-level DAW called GarageBand (Knight, 2013; Sadovnik, 2014; Street, 2014; Viega, 2018; Weissberger, 2014) others wrote about more professionally targeted DAWs such as Pro Tools (Kolstad, 2008; Crooke, 2018) and Ableton Live (Crooke, 2018; Crooke & McFerran, 2018; Noone, 2018) and one author didn't specify the DAW used (Solli, 2015). Perhaps the most technically advanced account of use with DAW is Noone, who uses an ecology of MIDI controllers DAW with intricate processing and some programming in object-based software, Max MSP which is now an integrated part of Ableton Live (Noone, 2018). Throughout the literature aforementioned, five categories of interconnected themes emerge. These themes include 1) typologies of equipment and techniques, 2) empowerment and agency 3) identity and aesthetics, 4) connecting with others and, 5) technical problems and preparations.

2.1.1 Typologies of Equipment and Techniques

Knight (2013) provides a typology for software used with iPads. Here, the DAW, GarageBand, is described as an app which is "useful for "playing" the instruments, recording live, or app- based music is also relatively easy to do. Export files as .mp3 (a more universal format) and easily alter the sound quality with a variety of preset equalisations (p. 194). GarageBand further provides clients with the possibility of "composing through playing live instruments [and] playing instruments on [...] are easily recorded and played back for discussion of a group" (p. 194). Knight (2013) maintain that iPads with DAW software can "create a unique experience" that otherwise would not have happened and emphasise music therapist has a responsibility to "retain a high quality musical experience" within the therapeutic relationship for this technology to be warranted (p. 194). Knight further sums up by emphasising that making use of DAWs on iPads calls for reflexivity in approach to therapy and technology emphasising the exigency for knowledge and research in this field.

Crooke (2018) provide another typology of beat making equipment with emphasise on the historical and cultural context of beat making culture and Hip Hop Culture. DAWs are seen as an essential part of an ecology of instruments for composing and performing called Electronic Music Production Instruments (EMPIs). This ecology of EMPIs include turntables, drum machine step sequencers, synthesisers, sample pads, DAWs, controllers and gesture-based EMPIs. Crooke describe a DAW as "an entire studio on a computer [which] enable beat makers to not only record external instruments and vocals across multiple audio tracks, but also to program MIDI sequences, to play back both external EMPIs, such as synths and samplers as well as internal software versions" (p. 9). The compositional field of practices related to beat making, often called production, has been arguably the most influential in the history of contemporary music. DAWs "provide accessible yet reasonably sophisticated song writing and compositional opportunities" (p. 9). This can further be seen in Kolstad (2008), who gives a detailed account of a songwriting process where the use of DAW and EMPIs are described as the main activity.

Crooke and McFerran (2018) account for three different improvisation procedures with music technology; 1) approach'n'play, 2) clip jamming, and 3) MIDI-linked jamming. All of these methods of working with improvisation with a DAW, although for this very project, they chose to do the MIDI-linked jamming with standalone devices. Approach'n'play was designed to facilitate instant music-making with. MIDI-Linked Jamming.

Viega (2018), on the other hand, focus on compositional techniques of recording and production and their clinical potential linked to humanistic theory. Recording techniques included using DAW related techniques such as prerecorded instrumentals, precomposed loops, and recording with electronic equipment. The focus production techniques here is based on DSP and agency.

2.1.2 Empowerment and Agency

Several authors connect working with DAWs in music therapy to agency or empowerment. (Crooke & McFerran, 2018; Noone, 2018; Viega, 2018) Solli (2015) understand empowerment as "the struggle to take back that power, to become sovereign over our own lives and bodies, to reclaim our right to make choices and to have access to resources to improve the quality of our lives" (Deegan, 1997, p. 11, as quoted in Solli, 2015, p. 17).

Acoustic instruments can be very difficult to play. However, Noone (2018) emphasise that musicking with DAWs and gesture-based MIDI controllers can provide empowerment through access, agency, aesthetic choice and environmental control (p. 279). Access bifurcates into musical expression and development of new skills and capacities (p. 38), and is related to the flexibility, modularity and, intuitiveness and tacitness of DAWs (p. 288). Noone further links use of DAW to clients experience of pride, ownership and agency "and a desire to demonstrate this agency to loved ones and the community" (p. 285). Shared music experiences, referred to by Noone as processes of *becoming-musicians* afforded a deterritorialising of the expert/non-expert dichotomy (p. 270). Furthermore, inexpensiveness and availability of mainstream DAWs and MIDI controllers can be important factors in facilitating agency in that it can increase participation and learning (Noone, 2018).

Viega (2018) point to that recording techniques in songwriting is linked to agency and autonomy through providing with a platform where clients can explore their potential through endless sonic textures. Furthermore, production techniques such as using DSP, i.e. filter, echo, reverb, compression and mixing and layering, layering vocals and using autotune, as metaphors for possible selves and potential.

First, possible selves are motivators; they function as incentives for future behaviour. They are selves to be approached or avoided. Second, by providing an evaluative and interpretive context for the current view of self, possible selves are instrumental in the affirmation and defence of the 'now' self
(Cross & Markus, 1991, p. 232 as quoted in Burland & Magee, 2013).

To sum up, music-making with sonic textures afforded by DAWs can provide agency and empowerment for clients.

2.1.3 Identity

Several authors point to the relationship between therapeutic music-making with DAWs and identity (Crooke & McFerran, 2018; Kolstad, 2008; Noone, 2018; Solli, 2015; Street, 2014; Viega, 2018). Kolstad (2008) was quite early with his study of using therapeutic songwriting with a DAW in music therapy. His case study of an adolescent girl in child protective services

illustrates a relationship between agency and identity. Agency affords a positive identity as a music producer. This notion that musicking with a DAW can afford agency and identity is also documented other in other studies (Street, 2014; Sadovnik, 2014; Solli, 2015; Noone, 2018). Solli (2015) emphasises the relationship between agency, competence and well-being in rebuilding an illness dominated identity. This is related to the case of Marco, a schizophrenic man, then working with a therapeutical process of producing a musical product. He argues that Marco's increased agency and confidence also affects his social initiatives. The therapeutic process of producing music afford clients with competent roles or identities as a rapper, musician, producer, technician, distributor, promoter (Kolstad, 2008; Solli, 2015; Street, 2014). The notion of identity through competent roles also applies to the music therapist (Solli, 2015; Street, 2014). Sadnovik (2014) argues that this has some commercial connotations and that this duality of the therapist as a creative producer or a commercial producer is one that should be taken into account. Nonetheless, the focus should be to "provide patients with means to explore and express their thoughts and emotions through the aesthetic prism of music" rather than realising the commercial potential for selling their music (Sadnovik, 2014, p. 256).

2.1.4 Connecting with Self and Others

The therapeutic process involved with producing a finished product which can be printed on a CD or published online afford connecting with other individuals and communities (Crooke & McFerran, 2018; Noone, 2018; Sadnovik, 2014; Solli 2015; Viega 2018, Weissberger, 2014). Solli (2015) illustrates that the therapeutic process of making a musical product can contribute to a shared identity: "the CD project [...] offered opportunities to connect with fellow patients, staff, and other musicians and to reconnect with friends and family" (p. 19). Similarly, Crooke and McFerran (2018) report that improvisation techniques with DAW and other beat making technologies can provide "young people began to experience themselves as competent beat makers within a short time, which addressed the purpose of musical identity exploration" (p. 7). The relationship between competent roles and community here is important. Clients who become experts through identity roles such as a producer or beatmaker, and thus identifying and connect to a larger community of producers and beatmakers. Street (2014) reports that using a DAW can "facilitate access to a more contemporary soundworld for clients, offering sounds and musical structures from their

preferred genres" (p. 231). Furthermore, arguing that "offering sound styles that clients clearly identify with can have a profound [...] effect" (p. 231). Similarly, Viega (2018) writes about the potential DAWs have for providing ever-changing sonic environments that facilitate clients in expressing selfhood:

Various sonic textures are discovered, and agency is applied, songwriters have the autonomy to mix, layer, edit, and shape the sounds into a musical identity that is uniquely their own. Selfhood can be heard within the artefact of the song in two ways: First, a picture of a person's identity emerges by experiencing the song's aesthetics as a whole; second, various parts of a person can be revealed by attuning to the individual sonic textures that comprise the aesthetic whole (p. 153).

Viega (2018) further links DSP to voicing selfhood. "Digital vocal manipulation, layering, and enhancement allows songwriters to give voice to new parts of their selves, exploring new possibilities of expressing themselves in the world" (p. 152).

2.1.5 Technical Difficulties and Preparation

Several authors report that time the setting up before music therapy sessions involving work with DAW the amount of time spent can be considerable (Crooke & McFerran; Noone, 2018; Weissberger, 2014). Setting the room up beforehand is warranted with special emphasis on clients with hyperactivity or low attention span. However, the set-up time can also have therapeutic potential (Weissberger, 2014). Crooke and McFerran (2018) reported that preparing for sessions was a very complex process which called for reflexivity and knowledge "about an array of beat-based genres and capable of creating a range of musical options within each of these. They also needed to ensure sounds were musically cohesive, no matter how they were played with one another" (p. 7). Nonetheless, the result of careful and successful preparation is an increased possibility for agency and mastery (Crook & McFerran, 2018). Noone (2018) argues that the music therapist has an important role in supporting agency and maintaining that awareness of the intentionality of the client. This awareness is an important factor since DAWs, depending on how it is individualised to each client's physical, cognitive expressive and aesthetic profile, can be both a barrier as well as an enhancer to therapeutic progress (p. 53). Frequent technical problems can result in clients experience of chaos.

Notwithstanding, a streamlined set-up process was reported to eliminate many technical problems. (p. 199)

The need for a deeper discourse is related to developing an increased understanding.

2.2 Mental Health Setting

This second part of the literature review focuses on current contemporary theory related to music therapy in a mental health setting. These theoretical perspectives are relevant because they inform the context and the value systems wherein Norwegian music therapist; thus, the context wherein the informants to this study are working (NHD, 2013). See method section for further information on the informants.

As mentioned, there has been a paradigm shift in mental health care from a focus on pathology to a focus on clients strength and potentials (Rolvjord, 2010; 2015a; Wampold & Imel 2015). The interest in music therapy in a mental health setting in Norway is growing. This growth aligns with the growth in evidence suggest music therapy can health and well-being of clients with mental illness (Aalbers, et al., 2017; Erkkilä, et. al. 2019; Geretsegger, et al. 2017; Gold et al. 2009; Gold et at. 2013; Maratos, et al. 2008; Mössler, et al. 2013). Evidence from the Cochrane Review on schizophrenia and schizophrenia-like disorders (Geretsegger, et al. 2017; Mössler et al. 2013) have led to a recommendation issued by the Norwegian Directorate of Health (2013). "Music therapy restores health, and treatment should start as early as possible, with attention to reducing negative symptoms. Treatment should be conducted by therapists with an approved education in music therapy" [translated by present author] (Norwegian Directorate of Health, 2013, p. 70). This has led to a new wave of implementing user perspective oriented music therapy into mental health institutions in Norway.

2.2.1 Mental Health Recovery

Historically, *mental health recovery* can be traced back to the Independent Living and Civil Rights Movement 1960s and 1970s (Davidson & Roe, 2007). The perspective of recovery started materialising trough a period of deinstitutionalisation of mental health practices,

addressing more complex needs and wants of people with mental illness than the traditional medical model of psychotherapy (Anthony, 1993). Recovery is described as "a multifaceted concept that has increasingly been used to describe and define goals and purposes for mental health services worldwide" (Slade, Amering & Oades, 2008; Slade, Adams & O'Hogan, 2012). This is demonstrated in the visions of mental health stakeholders internationally (National Directorate of Health, 2013; National Collaborating Centre for Mental Health; 2014; National Institute for Health and Care Excellence, 2011; Slade, Adams & O'Hagen, 2012; World Health Organisation, 2013) and in an increasing mental health literature on recovery (Davidson, et al. 2009; Slade, 2009; Slade, Oades & Jarden, 2017). Anthony (1993) provides a widely cited definition.

Recovery is described as a deeply personal, unique process of changing one's attitudes, values, feelings, goals, skills and/or roles. It is a way of living a satisfying, hopeful, and contributing life, even with limitations caused by the illness. Recovery involves the development of new meaning and purpose in life as one grows beyond the catastrophic effects of mental illness (Anthony, 1993, p. 15).

Other definitions, formulated from clients statements, describe recovery as "the lived or real experience of people as they accept and overcome the challenge of disability [...] They experience themselves as recovering a new sense of self and of purpose within and beyond the limits of disability" (Slade, 2009, p. 38). Other definitions from the first-person perspective are formulated; "for me recovery means that I'm not in hospital and I'm not sitting in supported accommodation somewhere with someone looking after me" (Slade, 2009, p. 38). Davidson and Roe (2009) note that although there is "little consensus on what recovery means in relation to mental illness" (p. 460). This ambiguity is a result of two contrasting perspectives on recovery (Davidson & Roe, 2007; Slade et al. 2012). While, Slade and Wallace (2017) distinguish between a dichotomy of *clinical recovery* and *personal recovery* (p. 24-25), Davidson and Roe (2007) distinguish between a dichotomy of recovery 'from' illness and recovery 'in' illness. The term clinical recovery has been used in psychiatry to describe a way of reducing illness, as an objective observable state or outcome of which is clinically observable and is rated by an expert clinician, not the patient. Consequently, clinical recovery is generalised and doesn't vary between individuals and deep assumptions about normality can pose a threat to individual needs (Slade, 2009; Slade &

Wallace, 2017). The term personal recovery, on the other hand, represents a way of thinking about living with illness and in spite of illness. Personal recovery is characterised as a subjective process or continuum, which is defined and rated by the person experiencing a mental health problem. As such clients are referred to as the 'expert of experience'. As a consequence, personal recovery is not generalisable and may mean different things to different people. Notwithstanding, ordinary aspects are shared between individuals undertaking a personal recovery. Important aspects of personal recovery include hope, identity, meaning and personal responsibility. Nevertheless, the focus on subjective experience and variance between individuals does make it hard to provide a shared definition (Slade, 2009; Slade & Wallace, 2017). Davidson et al. (2009) further describe the relationship between clinical recovery and personal recovery.

Processes involved in a person's entering into and being in recovery include the processes that appear to lead to a reduction in the illness as well. The opposite, however, would not necessarily be true. In other words, if we begin with describing the processes involved in minimising deficit, disability, and dysfunction, we may never arrive at a process of maximising the person's health and everyday life. Beginning with the person's everyday life and his or her efforts to live with the illness, on the other hand, naturally extends to efforts to minimise the illness as disrupting or posing barriers to that life. In brief, minimising illness is not the same as maximising health, and our model must incorporate both (Davidson et al., 2009, p. 34).

However, clinical recovery shouldn't be considered insignificant, but rather a small part of a wider context where symptom reduction and subjective well-being go hand in hand. Hence, mental health recovery can be seen as an attempt to increase the awareness of human beings and their complex needs. Davidson and Roe (2007) maintain that clinical recovery should be viewed as an underpinning of mental health recovery and therefore, a significant part of an individual's personal and social aspects of well-being as a whole. For this reason, and for the purpose of this study, For this reason, and for this study, I will refer to the term *mental health recovery* to refer to a taxonomy which includes both these underpinnings with a focus on Anthony's (1993) definition mentioned above throughout this thesis.

2.2.2 Music Therapy and Mental Health Recovery

In the music therapy literature, *mental health recovery* is gaining a foothold (Ansdell & DeNora, 2016; Bibb & McFerrand, 2018; Chhina 2004; Eyere, 2012; Kaser 2010; Kooji, 2009; McCaffrey, 2018; McCaffrey & Edwards, 2015, 2016; McCaffrey, Carr, Solli & Hense, 2018; McCaffrey, Edwards & Fannaon, 2011; Silverman, 2017; Solli, 2014, 2015; Solli & Rolvsjord, 2015; Solli, Rolvsjord & Borg, 2013). Although *mental health recovery* as a perspective is a relatively new theoretical perspective in music therapy a rather a fair amount of the theoretical foundation of which is emphasised from a mental health recovery has been elaborated upon in previous music therapy literature. Aligning theoretical perspectives include empowerment (Procter, 2002; Rolvsjord, 2004), well-being (Ansdell, 2014; Ansdell & DeNora, 2012; DeNora, 2013), social capital (Procter, 2004, 2011), anti-oppressive practice (Baines, 2013), resource-orientation (Rolvsjord, 2010, 2015a; Ruud, 2010), agency (Ruud, 1998, 2010; Rolvsjord, 2013; Stige & Aarø, 2012), and community-orientation and community music therapy (Ansdell, 2014; Stige, 2002; Stige & Aarø, 2012; Stige, Ansdell, Elefant & Pavlicevic, 2010).

McCaffrey, Carr, Solli and Hense (2018) argue that the most important aspect of how music therapy support recovery "involves building trust and relationships with individuals, providing a space for musical expression and reflecting upon this in the context of what the individual feels is relevant and needed at that moment" (p. 5). McCaffrey et al. (2018) further purpose a four-way model of maximising support for recovery in a recovery-oriented music therapy practice: 1) recognising clients as an expert by experience, 2) awareness and integration of processes at the core of recovery, 3) being resource-oriented and being-community oriented (p. 6). I will outline these four themes with an emphasis on the three latter as they form theoretical basis for my discussion later. The emphasis on only three here is that I argue that "expert by experience" relates to "being resource-oriented" in focus on strengths and potentials and the fact that 'experience' in the present author's opinion is by definition a resource. The close interrelationship between "being community-oriented" and "being resource-oriented", and "being recovery-oriented" and "being resource-oriented" have been pointed out earlier by Rolvsjord (2015a) and Stige et al. (2010).

We acknowledge these similarities and think that they demonstrate how community music therapy community music therapy may be developed in dialogue with other practices of and perspectives on music therapy. The resource-oriented feature of community music therapy of course also resonates with the developments in other related disciplines such as recent research on efficacy and positive emotions in psychology and on social capital in social studies (Stige et al. 2010, p. 283).

2.2.3 Expert by Experience

Firstly, in recovery-oriented music therapy practice should recognise and respect clients expertise by experience. Clients' are *experts by experience* because they "are the first and foremost point of knowledge in terms of understanding the factors that may hinder or foster personally fulfilling and meaningful life and the priorities placed upon them" (McCaffrey et al., 2018 p. 6). This view holds that an expert on mental illness is indeed a person living with mental illness. Such an epistemological position is a result of the increased focus on subjective experience and the status of qualitative research and ideographic knowledge in mental health settings (Slade, 2009). Another important aspect of this view is clients right to maintain an equal voice as a stakeholder in. Client first-person perspective on their own recovery process has also been used to formulate definitions of the recovery process. Solli (2015) emphasise that clients who are expert by experience also should be considered *experts of own music*.

2.2.4 Being Process-Orientated

Secondly, an important factor of a recovery-oriented music therapy practice is process awareness and integration. In a recovery process, as mentioned before, "individuals are supported to define their own needs, goals, dreams and plans for the future" (Le Boutillier et al., 2011, p. 1474). Moreover, goals and approaches in music therapy should be negotiated in mutual agreement between the client and therapist based on the client's preferences and beliefs. In a narrative synthesis of 97 papers describing personal recovery from mental illness, Leamy et al. (2011) suggest the CHIME conceptual framework. The CHIME framework focus on recovery journey as an active process which is unique to the individual, non-linear and a journey of stages. CHIME framework further identifies illustrates five recovery

processes suggested by clients in mental health recovery:

1. Connectedness: (peer support and support groups, relationships support from others, and, being part of the community)
2. Hope and optimism about the future: belief in possibility of recovery, motivation to change, positive thinking and valuing success, having dreams and aspirations, and, hope-inspiring relationships)
3. Identity: (dimension of identity, rebuilding/redefining positive sense of identity, and, overcoming stigma)
4. Meaning in life: (meaning of mental illness experiences, spirituality, quality of life, meaningful life and social roles, meaningful life and social goals, and, rebuilding life)
5. Empowerment: (personal responsibility, control over life, and, focusing upon strengths)

(Leamy et al. 2011, p. 448)

According to McCaffrey (2018), music therapy offers an agreeable process and is flexible and adaptable, allowing the mental health client to be in the driver seat. Research of recovery-oriented music therapy in Norway support and correspond with the CHIME acronym (McCaffrey, 2018; McCaffrey & Edwards, 2015, 2016; McCaffrey et al., 2018; Rolvsjord, 2010; Solli, 2014, 2015; Solli & Rolvsjord 2015; Solli, Rolvsjord & Borg, 2013).

In a meta-synthesis of 14 papers describing music therapy as a recovery-oriented practice Solli, Rolvsjord and Borg (2013) report four themes linked to the CHIME framework: 1) having a good time, 2) being together, 3) feeling and 4) being someone. Solli and Rolvsjord (2015) did another study relating to the CHIME framework in describing four similar themes. Here, user perspectives in music therapy by described music therapy as a treatment which could provide them with 1) freedom, from illness, stigma and treatment, 2) contact with oneself, aliveness, emotion and other people, 3) well-being by enjoyment and satisfaction, motivation, mastery and hope, and 4) symptom relief, i.e. relief from psychotic state, disturbing thoughts and voices and visual hallucinations (Solli & Rolvsjord, 2015, p. 73). This study is also relevant to this thesis in that is conducted in a similar context to the one my informants are working in, that is a mental health setting in Norway. I will further use the five

themes of the CHIME framework as a framework for my discussion section of this thesis. This will be important in illustrating the relationship between how working with DAW in music therapy can have the potential for clients process of recovery.

2.2.5 Being Resource-Oriented

Thirdly, McCaffrey et al. (2018) recommend that recovery-oriented music therapy practices should be resource-oriented, emphasising personal autonomy and strengths instead of deficits and weakness. This relates to perspectives included in a resource-orientated approach is linked to an interdisciplinary field of theory and research including empowerment philosophy, common factors approach, positive psychology, and current musicology (Rolvjord, 2010, 2015a). Empowerment philosophy is concerned with autonomy and agency of the self and emphasises enablement, control and participation. Procter (2001) emphasise that the hierarchical expert-patient dynamic of the relationship, which is traditional in a medical model can be experienced disempowering by clients (Rolvjord, 2004). Common factors approach, or contextual model in psychotherapy, emphasise extra-therapeutical factors and client factors that influence and support the therapeutic process (Rolvjord, 2010; Wampold & Imel, 2015). Rolvsjord (2015b) conducted a study of what clients do to make therapy work, discovering four themes of how the client's agency was an important contributing factor in music therapy. First, clients facilitated the therapeutic process by taking initiatives like choosing music therapy, suggesting activities, bringing musical material/artefacts, sharing thoughts and experiences, making changes in music, joking and teasing or using their knowledge and competence. Second, clients exerted control in therapy by regulating emotional intensity, negotiating ways of working and keeping secrets from the therapist. Third, clients committed to the relationship by nurturing commonalities, establishing equal structures, and caring for the therapist. Finally, clients showed engagement across contexts by, bringing artefacts across contexts, purchasing instruments, and using music at home (Rolvjord, 2015b). Finally, positive psychology, which is arguably the strongest influence of resource-oriented music therapy is preoccupied with positive health and positive emotions and positive experience as an important aspect of the therapeutic process (Seligman & Csikszentmihalyi, 2000). Seligman and Csikszentmihalyi (2000) define positive psychology as:

The field of positive psychology at the subjective level is about valued subjective experiences; wellbeing, contentment, and satisfaction (in the past); hope and optimism (for the future); and flow and happiness (in the present). At the individual level it is about positive individual traits: the capacity for love and vocation courage, interpersonal skill, aesthetic sensibility, perseverance, forgiveness, originality, future-mindedness, spirituality, high talent and wisdom. At the group level, it is about the civic virtues and the institution and the institutions that move individuals toward a better citizenship: responsibility, nurturance, altruism, civility, moderation, tolerance and work ethic (Seligman & Csikszentmihalyi, 2000, p. 5).

Rolvsjord, Gold and Stige (2005) have made an effort to establish a protocol of different levels of principles related to being resource-oriented. Unique and essential therapeutic principles of being resource-oriented in this framework are described as; 1) focusing on the client's strengths and potentials; 2) recognising the client's competence related to her/his therapeutic process; 3) collaborating with the client concerning goals of therapy and methods of working; 4) acknowledging the client's musical identity; 5) being emotionally involved in music; 6) fostering positive emotions (Rolvsjord et al. 2005, p. 23). On the other hand, unacceptable or proscribed therapeutical principles of a resource-oriented approach are described as; 1) neglecting the clients strengths and potentials; 2) having a strong focus on pathology; 3) avoiding emerging problems and negative emotions; 4) directing in a non-collaborative style.

Rolvsjord (2010) gives an account of different resource-oriented practices. Here, it is important to note that a focus on resources and strengths should not be viewed as a way of avoiding or ignoring problems. This is perhaps the most common critique of resource-oriented practices. Priebe, Omer, Giacco and Slade (2014) acknowledge the resource-oriented capacity of creative music therapy in a mental health setting, where "music creation and the meaningful interactions within it to encourage patients' personal growth, expressive skills and ability to relate to others within" (p. 257). Furthermore, McCaffrey et al. (2018) argue that "focus on wellbeing, and positive aspects of in music therapy" (p. 7) is important in mental health practices since clients often experience stigma, hopelessness and low motivation.

2.2.6 Being Community-Oriented

Finally, McCaffrey et al. (2018) suggest that recovery-oriented music therapy should be community-oriented. Since “people with mental health problems often experience stigma, disempowerment and social exclusion, recovery processes are interlinked with social processes of change” (p. 7) On that account, an important focus of recovery is to support people to be reintegrated to society as equal citizens. "Citizenship is central to supporting recovery, in which the right to a meaningful life for people living with severe and enduring mental illness is advocated" (Le Boutillier et al., 2011, p. 1474). A community-oriented approach aligns with the field of theory in music therapy (Pavlicevic & Ansdell, 2004; Ruud, 2010; Stige, 2002, 2012; Stige & Aarø, 2012; Stige, Ansdell & Pavlicevic, 2010). In the words of McCaffrey et al. (2018), music therapy has established itself as a "good arena for developing a positive relationship with others, expanding social networks, and to help with the transition from hospital settings to everyday life in various social and cultural arenas" (p. 8). The notion of music as a resource for everyday life is an important factor which is supported by an interdisciplinary field of literature on how people use music in everyday life. DeNora (1999, 2000) and Bull (2000, 2007) writes from a sociological perspective. Ansdell (2014), Bonde, Ruud, Skåneland and Trondalen (2013) and Rolvsjord (2013), Ruud (2012), Skåneland, (2009, 2012), and, Stige (2002, 2012) writes from a perspective of music therapy. Rolvsjord (2015a) points to that therapist not always are aware of the fact that "client's reflexive actions, as when the client was taking actions to make the experiences in therapy relevant to everyday life context" (p. 315-316). Moreover, this can relate to choosing an instrument. "Material culture of music-making allows us to consider the role of objects in people's lives" (Halstead & Rolvsjord, 2017, p. 4). Furthermore, materiality becomes part of our personal, cultural and behavioural repertoires, sometimes challenging and sometimes reproducing social structure. Thus, choosing an instrument can be a way of connecting with a community or a culture. Therefore, the discourse of music and everyday life is intrinsically linked to music cultures and musical instruments. Being community-oriented further warrants moving the potentials of music therapy out of the therapy room and into various other contexts, i.e. doing outside of hospital concerts. Halstead and Rolvsjord (2017) emphasise that this endeavour should be one which holds social, cultural and political context in mind. A particular potential related to the context of digital music technologies and using DAWs is making CD or publishing music online (Noone, 2018; Sadovnik, 2014; Solli, 2015). An

important aspect of this community-oriented approach is situating the person undergoing recovery in contexts.

3. Method

I choose to explore my research question through interpretivist semi structured interviews with four music therapist working with DAWs in a mental health setting. Arguably, I could have selected an objectivist method such as questionnaire-based *survey research* to generate both qualitative and quantitative data for my analysis. Survey research would have maybe saved me time, allowed me to cover more widely, and give me a more generalisable result, however, the disadvantage is that would be harder to provide in-depth result because I wouldn't be able to purposively sample the informants or ask follow up questions (Curtis, 2016, pp. 527-539). Alternatively, I could have chosen a *mixed method* study conducting both interviews and questionnaires based methods. Nevertheless, I argue that the research question of this study, in exploring personal accounts of human experience, is already calling for an interpretivist approach which presupposes different interpretations of reality rather than fact or truth. This approach will be vital in order to secure valuable in-depth descriptions through selecting a competent group of informants and asking individual follow-up question. Moreover, DAWs as defined in this thesis are usually a set of highly personal ecology of interfacing hardware and software (Case, 2014; Strachan, 2017). For this reason, the purpose of being able to generalise the empirical data seems inadequate to the construction of meaning which is the focus of this research.

3.1 Interpretivist Perspective¹

This study is classified within an interpretivist perspective toward the research question. *Interpretivist research*, also called qualitative research, is perhaps best described in comparison to *objectivist research*². While objectivist researcher assumes that "there is a single reality that exists independently of humans' experience of it and that it is possible to increasingly know what this reality is through the senses", an interpretivist researcher will

¹ I will subscribe to Wheeler (2016, p. 44), using the term *interpretivist perspective* as a synonym to *qualitative method* because the terms *design* and *method* appear naturally misleading, perhaps especially.

² Also called *quantitative research*.

assume "that reality and truth are multiple human constructions rather than objective absolutes" (Wheeler, 2016, p. 44). Furthermore, an objectivist researcher aims "to determine what is true or not true—to confirm or deny a focused and well-defined hypothesis established at the very beginning of a study". While an interpretivist researcher aims to explicate and understand a particular phenomenon through exploration as it "unfolds and reveals itself during the study" (Wheeler, 2016, p. 43). The present study is thus classified within the interpretive research paradigm investigating qualitative empirical data (Bhattacharjee, 2012). This means that the empirical data is interpreted through the epistemological perspective of social constructivism with an iterative hermeneutic approach. Deniz and Lincoln provide a much cited definition of interpretivist research:

[Interpretivist] research is a situated activity that locates the observer in the world. It consists of a set of interpretive, material practices that make the world visible. These practices transform the world. They turn the world into a series of representations, including field notes, interviews, conversations, photographs, recordings, and memos to the self. At this level, qualitative research involves an interpretive, naturalistic approach to the world. This means that [interpretivist] researchers study things in their natural settings, attempting to make sense of, or interpret, phenomena in terms of the meanings people bring them (Deniz & Lincoln, 2005, p. 3, as quoted in Alvesson & Skoldberg, 2009, p. 7).

Philosophically I would define my study as a *pragmatic study*. A pragmatic study aims to "accept chaos in interrelationships among variables; seek an understanding based on human experience; view a problem as a complex problematic situation; and promote activism, democracy, and policy formulation" (Duram, 2012). This means that it is important for me as a researcher that the study can be of pragmatic value to as many people as possible either through discovering new ways contextualising DAWs in music therapy or through discovering new methods of using and thinking about DAWs in music therapy in a health setting.

3.1.1 A Hermeneutic Approach

The present study is placed within hermeneutics. Alvesson & Sköldbberg (2009) describe hermeneutics as "the thinking par preference of our time, a thinking where the plurality of interpretations may collide and bring inspiration" (p. 91). Historically the branch of hermeneutics is rooted in exegesis, the interpretation of texts, especially of the Bible and other classical text during the Renaissance period (Alvesson & Sköldbberg, 2009). In modern times, the exercise of hermeneutics has expanded to include "the way we assign meaning to occurrences through the texts we use to represent experience" (Loewy & Paulander, 2016, p. 752). These classical texts were interpreted with the mantra "the meaning of a part can only be understood if it's related to the whole" (Alvesson & Sköldbberg, 2009, p. 92). As a whole consists of parts and the parts constitute a whole, they can only be comprehended in relation to each other. This is usually illustrated by the hermeneutic circle (see figure 1). Through the process of extracting meaning from each of the parts, the hermeneutic circle turns into a hermeneutic spiral where every circuit of the circle gives a deeper understanding of a topic. This part-whole and whole-part perspective of hermeneutic interpretation is referred to as the *objectivist hermeneutics*. A second perspective, *alethic hermeneutics*, which contrary to objectivist hermeneutics dissolve the polarisation between the interpreting subject and the an interpretation of something objective (Alvesson & Sköldbberg, 2009; Loewy & Paulander, 2016) An alethic perspective emphasises the relationship between preconceptions and understanding.

We are irrevocably merged with our world, already before any conscious reflection, and the polarisation between a thinking subject and an object is therefore a dubious secondary construction. Consequently, the conception of understanding in an objectivist hermeneutics is called into question, since it builds on this polarity between an empathising subject and a (human) object for empathy. (Alvesson & Sköldbberg, p. 118)

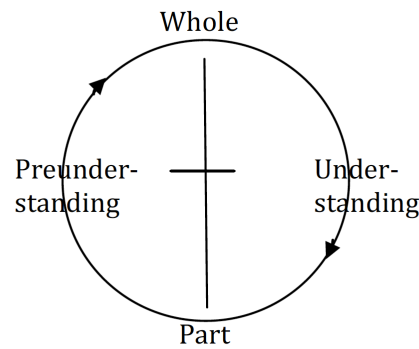


Figure 1: A version of the hermeneutic circle based on the Alvesson & Skoldbergs (2009) hermeneutic circles (p. 92 and p. 96).

In this perspective, researchers are already part of a "particular, historically and culturally, ever-changing 'lifeworld', and their practices are already laden with theory and temporality" (Heelan as cited in Alvesson & Sköldberg, 2009, p. 96). In my research process I will integrate both an objectivist and alethic perspectives in my interpretations since they are no mutually exclusive. In this regard, meaning of this study is explicated and understood through a series of open-ended and creative processes where the present researcher immerse in an interchange between whole-part and preunderstanding-understanding. The result should be considered one of many possible subjective interpretations tinted with colours of my background and biases.

3.1.2 Social Constructivism

Philosophically this thesis is placed within a social constructivist research epistemology. "Constructivism differs in focus from objectivist research epistemologies in that its aim is understanding phenomena through interpretative process. These processes are intended to explicate meanings rather than explanations of causes and effects identified through distanced observations and subsequent description" (Hiller, 2016, p. 198). As a result, a constructivist perspective holds that meanings are "constructed by individuals through their interactions with and interpretations of the world and each other" (Hiller, 2016, p. 198). These meaningful human realities are transient and in flux, repeatedly changing to the beat of new experiences which are perceived and brought to awareness (Hiller, 2016, p. 198). With this premise in

mind, the present study is an attempt to understand and reconstruct the meaning my informants ascribe to their experience of a particular phenomenon, using DAWs in music therapy. I want to see and hear an ever-changing, ambiguous reality through the informant's eyes and ears and reconstruct meaning through my subjective analysis of their accounts. As a consequence, there is a minimum of two levels of construction or reconstruction of intersubjective experience. First, the reality is reconstructed from my informant's intersubjective experience of music therapy with clients in the interview; secondly, the meaning is reconstructed through my analysis and interpretation of the interviews. This intersubjective aspect of reconstruction will label my research in the paradigm of social constructivism.

3.1.3 Reflexivity

Reflexive research "draw attention to the complex relationship between processes of knowledge production and the various contexts of such processes, as well as the involvement of the knowledge producer.", (Alvesson & Sköldberg 2009, p. 8). Moreover, reflexivity encourages researchers to operate on two different levels of activity and awareness: *interpretation* and *reflection*. In this regard, reflexivity in research can be considered a critical perspective toward researchers interpretation and biases. Alvesson and Sköldberg (2009) explain critical reflection as a way of "thinking about conditions for what one is doing, investigating the way in which the theoretical, cultural and political context of individual and intellectual involvement affects interaction with whatever is being researched" (Alvesson & Sköldberg, 2009, p. 269) Furthermore, critical reflection "turns attention inwards towards the person of the researcher, the relevant research community, society as a whole, intellectual and cultural traditions, and the central importance, as well as the problematic nature, of language and narrative in the research context" (Alvesson & Sköldberg, 2009, p. 9).

The research process constitutes a (re)construction of the social reality in which researchers both interact with the agents researched and, actively interpreting, continually create images for themselves and for others: images which selectively highlight certain claims as to how conditions and processes - experiences, situations, relations — can be understood, thus suppressing alternative interpretations (p. 10).

In this regard, means that all empirical data material, trivial and non-trivial, should be considered a result of interpretation and therefore ambiguous by principle, hence, merely one possible subjective interpretation of reality rather than a mirrored image of it (Alvesson & Sköldbberg, p. 9). In this regard, it is paramount that I am constantly directing my awareness toward the multiple ways my background; my enthusiasm toward music technology, my identity as a live electronic musician, a DAW user and a digital native, and, my education from a humanistically oriented school of music therapy, serve as contextual biases to which are actively influencing my interpretations of the informants answers given during the interviews. As a result, reflexivity is an instrument which helps me to preserve the empirical material minimally uncorrupted by perceptual and contextual biases. The paradox of reflexivity in research illustrates that, although perceptual and contextual biases make interpretation possible, they also make research partially a naïve and unconscious undertaking of which demand constant critical questioning and evaluation (Alvesson & Sköldbberg, 2009).

3.2 Interpretivist Interviews

"Kvale and Brinkmann (2009) introduce the *miner* and the *traveller* as metaphors for the interviewer and two contrasting epistemological conceptions of the interpretivist interview. A miner is in the business of knowledge collection, and to a miner, knowledge is a piece of metal. In Latin *conversation* translate into 'wander together with'. In my semi-structured interview, I will, therefore, be a *traveller* (interviewer) who wanders together with my *fellow travellers* (interviewees). The meanings will unfold during the journey through the traveller interpretation of this conversation (Kvale & Brinkmann, 2009, p.48-49). Kvale and Brinkmann (2009) purpose a model of practical steps in seven stages as a framework for qualitative interviews: (1) thematising an interview project, (2) designing, (3) interviewing, (4) transcribing, (5) analysing, (6) verifying and (7) reporting. This is helpful for my study. This model emphasises the importance of planning an entire interview before conducting the interviews" (Aarvik, 2017, p. 8-9³).

³ I used this direct quote from my project proposal. I choose not to rewrite it since it the content of it still doesn't is congruent with the purpose of this thesis.

I conducted the interviews and prepared my informants by sending them an information letter with the themes and questions before the interviews were conducted. This allows my informants to prepare for the topic of investigation, thus, giving me the advantage of as knowledgeable informants as possible which might provide me with more in-depth information.

Interviewing is a complex process where the researcher inevitably have *double attention*. According to Wengraf (2001) double attention is that "you must be both listening to the informant's responses to understand what he or she is trying to get at and, at the same time, you must be bearing in mind your needs to ensure that all your questions are liable to get answered within the fixed time at the level of depth and detail that you need" (p. 195). The interview guide will relieve a single attention, allowing me to increase my presence in the moment. An increased presence is necessary to be able to ask critical follow-up questions. Notwithstanding, the interviews will still be a challenging. For this reason I will hold a pilot interview.

I used two different portable audio recorders to record the interviews in the case of technical problems, or if one audio recorder run out of batterie power, I will have a backup. Audio allows you to listen to the interview over again as many times as you please making the transcription more accurate with ease. Imagine having a "third attention", taking notes while conducting the interview. In my research, this particular phenomenon is music therapists experiences of using DAW with clients in a mental health setting. My interviews will thus benefit from being conducted in the same environment where these phenomena occur in the music therapy room. This was done to the extent it was possible. Two of my informants were unable to meet me in their natural habitat. This may very well have resulted in important information remaining undiscovered. It could be argued, on the grounds that an interview is a live social interaction, that using a video recording, thus documenting body language, would representation reality more accurately. Nevertheless, one could argue that a video recording may also inhibit the social interaction on the premise of self-consciousness of being videotaped. In any of which cases, I would have to prepare a consent form for my informants to sign. This was done in advance of the interviews after recording the interviews. I will transcribe the result.

3.2.1 Interview Guide

An interview guide is a list of important questions and which order to ask them. A sort of shopping list that helps you get all the ingredients that you need for your investigation. (Robbison, 2002). My interview guide is divided into into five areas of information of which I was interested in: 1) *how the informants are defining DAWs*, 2) *why my informants were using DAWs* 3) *how my informants were using DAWs*, 4) *how my informants were thinking about DAWs in relation mental health practice*, and 5) *how my informants were thinking about DAWs in relation to music and perception*. I formulated nine open ended questions to capture these five themes followed up with probing questions if needed. All nine questions and to capture these five themes were discussed in all four interviews. However, the chronological structure of the interviews varied. The interviews lasted about 60-90 minutes. In retrospect

Interview Guide

- 1) How would you define a DAW?
- 2) In what way are you using the DAW?
- 3) Why do you choose to work with a DAW and how does this relate to music therapy within a mental health setting?
- 4) Is there any way you were able to use a DAW which you are currently unable to?
- 5) How does using a DAW relate to working in a mental health setting?
- 6) Are there any advantages or disadvantages to using a DAW?
- 7) What role will DAWs play in future music therapy practices?
- 8) Does using a DAW change your perception of musicking in your practice?
- 9) When was the last time you used a DAW in music therapy?

3.2.2 Informants

I choose to interview a population of four music therapist working in with music technology in a mental health setting. Informants were selected using purposive sampling in order to assure that I acquire the relevant knowledge for the purpose of this study. Purposive sampling is common in interpretivist studies informed by phenomenological theory studies. This relates

to my study, as my research questing states, investigate experience. Wheeler (2016) describe purposive sampling:

In purposeful sampling, research participants are selected because of what their study may bring to the research question, not because they are necessarily typical of the group being studied. The purpose of selecting participants is not, therefore, so that the results may be generalised (as in quantitative experimental studies), but instead because there are things that can be learned from studying them (p.241-242).

I formulated four criteria for inclusion to my study. These four criteria were instrumental in recruiting informants who are adequately competent to secure good information. Purposeful Sampling.

- 1) Educated music therapist with MA in music therapy
- 2) Minimum one year of experience from clinical practice
- 3) Work as a music therapist in a mental health setting.
- 4) At least three years of experience with the use of DAW.

In my initial project proposal inclusion criteria number two had a minimum of five years of experience. This was lowered to one year in order to include an informant who just had one year of experience from clinical practice. Naturally, this may seem counterintuitive in terms of it is natural to think that more experienced music therapist have is good. However, I wanted to include young music therapist who grew up as a digital native to get a wider generational perspective of technology.

Also, initially, I wanted a population of gender diversity, with two males and two females. Reflections of gender and music technology would be interesting. However, this was proved difficult to realise without traveling distances of which are too long and expensive considering the financial budget for this thesis. Hence, this criteria for inclusion was also dropped. Although, this becomes an ethical issue terms of a responsibility. The cultures of composing with digital music technology is male dominant (Strachan, 2017; Magee & Wimberly 2014).

Consequently, as a cisgender white male, I have an ethical responsibility to not further contribute to a masculinist discourse of music technology in music therapy. However, a discussion of gender in terms of music therapy instruments and music technology will remain outside the scope of this study. For further discussions of gender and musical instruments and technology in educational and therapeutic settings look to Magee, W. L. & Wimberly, D. (2014), Halstead & Rolvsjord (2017) and Thaler & Zorn (2010).

For reasons of anonymity I will not elaborate further about the work place of my informants.

3.3 Ethical Guidelines

Conducting qualitative research interviews places the researcher in position of ethical responsibilities. In the next section, I will address and reflect upon four *fields of uncertainty* traditionally considered in ethical guidelines: informed consent, confidentiality, consequence, and the role of the researcher when dealing with ethical guidelines. These four fields of uncertainty can be considered as "problem areas that should continually be addressed and reflected upon" (Kvale & Brinkmann, 2009, p. 69) throughout the research process. Moreover, in qualitative research it is important that the researcher remains open to "the dilemmas, ambivalences, and conflicts that are bound to arise throughout the research process" (Kvale & Brinkmann, 2009, p. 69).

3.3.1 Informed Consent

Informed consent, according to Kvale and Brinkmann (2009) "entails informing the research participants about the purpose of the investigation and the main features of the design as well as of any possible risks and benefits from participation in the research project. Informed consent further involves obtaining the voluntary participation of the people involved, and informing them of their right to withdraw from the study at any time" (p. 70). For this reason I have formulated a consent form of which was sent to all for all my participants to read and sign. (appendix: 1) This consent form serve as a documentation of my informants awareness of the potential risk of participating in my study.

3.3.2 Confidentiality

According to Kvale and Brinkmann (2009) confidentiality in my research ensures the principle of my informant's right to privacy. In this regard, private information identifying the informants of my research shall not be disclosed. This means if a research study benefits from publishing information that will potentially disclose informants private information, this should be done in agreement with the informants of the study before the study is conducted.

I assured that my informants right to privacy would be maintained throughout the study by the means of anonymity. This involved naming my informants audio recordings by codes rather than names from the first time they were saved. Originally, the audio files were also saved automatically as ciphers on the SD card in an audio recorder, but I needed a way of cataloging them in order for convenience. The same codes were used in transcriptions, however, I randomised them again after before adding quotations to my final text with the codes, informant 1, 2, 3, and 4. Finally, I omitted details of which in my interpretation would and made sure I followed Norwegian Social Science Data Services protocols for saving audio recordings data material.

Since the Norwegian community for music therapist in a mental health setting is a small community especially when the scope of informants is narrowed down to music therapists who integrate and use DAWs. Hence, the issue of confidentiality becomes slightly problematic in regard to that there is a small risk that music therapist in the same community can identify my informants. This makes confidentiality in this study is a primary concern which needs careful reflection.

Kvale and Brinkmann (2009) further point toward another issue of confidentiality in qualitative interviews:

Confidentiality as an ethical field of of uncertainty relates to the issue that on the one hand, anonymity can protect the participant and is thus an ethical demand, but, on the

other hand, it can serve as an alibi for the researchers, potentially enabling them to interpret the participants' statements without being gainsaid (p. 73).

This suggests that the interview contains an asymmetrical power relationship where the researcher has a monopoly on interpretation. In order to avoid an asymmetrical interpretation I made sure all of my had an opportunity for a quotation check. This issue relates to the earlier mentioned aspect of reflexivity and to the role of the researcher and the integrity of the researcher which is discussed further under. Finally, there's also a point to be made in that some informants may actually want to be credited for their participation in a research study where they have spent their valuable time contributing with valuable information. In this case anonymity can deny my informants their voice in the research and the ownership of personal views and perspectives of which they should be entitled to (Kvale & Brinkmann, p.73). This could relate to this study in that all my informants are academically educated music therapists with a master degree or more. Some of them might have hopes for doing a PhD, some of them might have a PhD hoping to publish their writings in subsequent books or journals.

They seemed fine with it, but I have, nonetheless, offered all of them a possibility for a quotation check to make sure that they are comfortable with; how I interpret and reconstruct their construction of reality, and how I have maintained to conceal their identities to protect their right to privacy.

3.3.3 Consequences

The consequences of a qualitative research interview can be addressed with reflection to possible harm to the informants, on the one hand, and, the benefits expected by informants to my study. The ethical principle referred to as, *beneficence* can be understood in terms of the risk of harm to an informant should be as small as possible. Moreover, as a general rule. the sum of potential benefits to the informant should outweigh the risk of potential harm to the informant. Also, if the knowledge acquired is of high importance this can warrant a tolerance for higher potential risks to the participating informants (Kvale & Brinkmann, p. 73).

I found two possible risks of harm potentially related to this study. First, the openness and intimacy form of the qualitative research interview can be seductive, thus causing informants to disclose information they probably shouldn't have or information they later regretted disclosing (Kvale & Brinkmann, 2009, p. 73). I experienced informants who corrected their statements after saying them in during interviews due to the implications of the information. Asking for a citation check if that piece of information should be used. In this case I choose to further anonymise the statement by not referring to any particular informant before sending. Another issue this study relates to that some there is a difference between written and oral language. In this regard a verbatim transcription of interviews sent to an informant for a citation check can be perceived as hurtful (Kvale & Brinkmann, 2009, p. 73-74). With regard to this I decided not to send verbatim transcriptions of interviews, but rather the finished text for my thesis, where I, as mentioned earlier, have transformed the oral statements, through interpretation, into written text and then translated them from Norwegian into English. Also, another point to this is that it saves the informants time since the full length written of a transcribed interview is about twenty pages long, but the citations used for the final text are naturally shorter. On a final note, I generally experienced my informants to be happy about participating as informants to my study and they seemed legitimately interested in contributing with information to my study.

3.3.4 Role of the Researcher

Kvale and Brinkmann (2009) maintain that "the researchers integrity is critical to the quality of the scientific knowledge" (p. 74) This is particularly emphasised in interviewing wherein the researcher is the main instrument for securing knowledge of scientific quality. Integrity of researchers is defined as their "knowledge, experience, honesty and fairness" (p. 74). In this regard it is crucial that the results are checked thoroughly by a researcher with a wholeheartedly performed integrity in order to ensure the scientific quality of the knowledge published. The researchers integrity thus becomes a decisive factor (Kvale & Brinkmann, p. 74).

Independence of research is another important factor in maintaining that the scientific quality not contaminated by the researchers relationship to either those funding the research or by its informants. Thus, independence of research can be co-opted from "above" and "below". In qualitative interviews the researcher interact with informants through close and interpersonal interaction. This appeals to my study in the regard that their community for music therapy in Norway is quite small meaning and the community for music therapist who are interested in music technology and work in mental health setting is even smaller. This suggest similar interest between the researcher and informants which might further increase the risk of "going native", an anthropological term for a professional distance. As a further consequence, this can involve a tension between a professional distance and a personal friendship. However, this is more relevant in the case of interviewing clients. To sum up, I need to be careful in regard to these suggestions that the present study is particularly prone to be co-opted from "below" (Kvale & Brinkmann, pp. 74-75).

3.4 Transcription

Malterud (2013) maintain that all research is an interpretation of the reality; hence, an indirect rather than a direct mould of reality. Kvale and Brinkmann (2009) argue that an interview is an evolving face-to-face conversation between two people is different there is in an interaction between two physically present persons which is lost or in a transcription where the interaction is abstracted and fixed in a written form (p. 177).

To transcribe means to transform, change from one shape to another. Attempts at verbatim interview transcriptions produce hybrids, artificial constructs that may be adequate to neither the lived oral conversation nor the formal style of written texts. Transcriptions are translations from an oral language to a style of written texts; what is said in the hermeneutical tradition of translators also pertains to transcribers: *traduire traïtor* — translators are traitors (Kvale & Brinkmann, 2009, p. 178).

In accordance with Kvale and Brinkmann (2009), I have done my best not to get "lost in transcription". Nevertheless, all such attempts will result in some information being lost in transcription. In my transcription, there are several levels of transformation to be noted here.

First, my interview is conducted orally and recorded to an audio file. Hence, the first transformation is one of transcribing the audio recording into written text, from audio file to text file. This leaves me with some obvious choices. Given the nature of this study, there is an abundance of the information in the audio recording of which is not necessary for my study — so polishing some of the coarse qualities that might distinguish an oral conversation from a written text. In an example, sometimes the informants would string together sentences in a fashion of 'trial and error', starting the sentences over and over again in various ways before finishing their formulation satisfactory. Here, I used interpretation and took the liberty to transform these oral formulations into legitimate written sentences by omitting all. Another example is omitting common verbal phrases such as 'eueeh' and 'aaah' which are used at a high frequency by some informants. These phrases would otherwise pollute the written transcription with unnecessary noise of which would result in spending a lot more time throughout the analysis. Similarly, long pauses, repeating words, and stuttering, and unnecessary frequent use of binding words such as sentences were omitted.

In some cases, this "oral noise" contained more valuable information. I did include onomatopoeic phrases such as "djedjedjedje döddöddöddö" when a respondent failed to remember the name of an audio effect in Ableton called *beat repeat* (popularly also called stutter effect) and chose to mimic the sound of this audio effect. Also, informants performed almost in a theatrical sense when illustrating examples from practice with clients. I choose to include some of the intonation information in the transcription by adding adjectives describing the level of enthusiasm in these "reenactments". Finally, since the interviews were conducted in Norwegian, the transcriptions were also written in Norwegian. I only translated the parts I ended up using for quotations into English. This adds a final level of transformation of which result in formalising the language further into a written style. Also, this level posed some challenges. Some words sound different than how they are written; the English language is a good example of a language where the frequency of difference is high. Similarly, in different dialects of Norwegian "to" and "and" can sound similar. Which can sometimes lead to confusion or misspellings, especially when transcribing long interviews where the need to keep a rapid pace to follow the speaker is important in transcribing.

3.5 Data Analysis

According to Kvale and Brinkmann to analyse means "to separate something into parts or elements" (2009, p. 193). Therefore, my analysis will be a sort of a process deconstruction the interview manuscripts I transcribed into parts and then reconstruct them into a whole coherent text. This task of analysis brings about inevitable challenges. The context wherein a quote is presented will affect how the reader interprets it. Therefore, the responsibility to disseminate the meanings of the informants is grand and complicated. Although I was the one conducting the interviews, asking the questions, and listening to the answers given, I am not able to go further than interpret what my informants answers. I don't know what they were actually thinking about during the interviews. To ensure the gap between my interpretations and the informants intended dissemination. My analysis of the can, therefore not be rendered as objective knowledge with freedom for bias or intersubjective, but rather *reflexive objectivity*. Kvale and Brinkmann (2009) describe reflexive objectivity as a researcher striving for sensitivity about bias and subjectivity and how these factors contribute to the production of knowledge. This means portraying biases and preconceptions through writing them in the text where it seems suitable (Kvale & Brinkmann, 2009, p. 242-243).

I conducted a thematic analysis of the empirical data, which focuses on meaning. This analysis is conducted in three steps, 1) meaning coding, 2) meaning condensation and 3) meaning interpretation. (Kvale & Brinkmann, 2009, p. 200) The first step, *meaning coding*, and *categorisation*, is the process of identifying parts and or themes. This meant reading through the transcriptions while listening to the interviews once trying to identify the interesting information related to my research question. Listening to the recording while reading gives the advantage of being able to revise and correct possible inaccuracies of the transcription. After the first read-through, I copied the transcriptions into separate documents and listened through while reading again.

During this second read-through, I tried to extract specific information from the interview. This meant editing the transcriptions attaching notes and keywords to important quotes, highlighting important quotes and giving headlines to different sections of the interviews. At this point, themes and categories of the interviews started to emerge. Making notes and keywords made it easier to navigate through the transcription documents allowing me quick

searches in the documents. I started making bricolage with different statements, categories and subcategories giving different titles and subtitles for each read through. Data analysis is where the findings are extracted from the interviews I transcribed — after a lot of hermeneutic back and forth between part-whole and presupposition-understanding, revisiting literature, renaming categories and sometimes rewriting quotes. The second step was *meaning condensation*, the process of abridging unnecessarily long statements, sometimes combining two statements about the same theme or that say the same thing in two slightly different ways (p. 207). The argument of not further abridge the analysis is here made with attention to the informant's voices are the basis for this type of idiographic research. The analysis is therefore also presented and narrated with regard to the informant's statements rather than summaries. The final step, *meaning interpretation*, involved interpretations that go beyond the manifest meanings provided by the informants.

The data analysis presented in chapter 4 is merely explicated from the interviews without references to theory. A synthesis of the data analysis relevant literature concerning the themes is done in a discussion in Chapter 5.

4. Data Analysis

During my analysis of the data material, four super-ordinate themes emerged as explicitly or implicitly relevant for my research question: 1) a structuring resources, 2) aesthetic experience and agency, 3) using client strength and resources, and, 4) making things, connecting with others. I will, for this reason, repeat my research question.

How do music therapists in a mental health setting experience working with DAWs?

1) A Structuring Resource	2) Aesthetic Experiences
Planning and Preparation	Sounding Good: Attuning to Clients
Knowledge, Training and Technical Problems	Sounding Good: Increased Participation and Motivation
Freeing up Attention: A "Third" Band Member	Sounding Bad: A Reality Check
GUI: Visualising the Non-Represented	

3) Using Clients' Strength and Resources	4) Making Things and Connectedness
Competent Clients	Documenting Positive Memories and Achievements
Music of Everyday Life	Reaching Beyond the Therapy Room
	Copyrights and Privacy

Table 1.

As mentioned earlier, DAWs are considered as highly personal instruments in that they usually exist in an expanded ecology of interconnecting or interfacing devices. For this reason, I will give a short account of the informant's definitions of DAWs before moving on to the main themes of the analysis. The informants define DAWs as a technology much like Heidegger (1977), who describes as a "means to an end" and as "a human activity." Informant 3 describes some of these activities.

Informant 3: I define DAW as a songwriting tool, a heuristic device for supporting learning, an instrument to play with, and a user interface you can of which visualises music.

Moreover, Informant 1 provides a definition of DAW, which also includes interaction with a mainstream culture of music-making, which is shared with clients.

Informant 1: I look at it as an instrument on the same line as a guitar, a drum kit, or whatever you want to use to make sound. It is also something that is familiar to many of the clients I work with here. A lot of them have or have heard of Ableton. It's a platform they know, and we have in common.

In this sense, DAW is more than technological artefact for music-making. It is something related to a global culture of technology and musicking to which clients relate and participate in. In this sense, using a DAW is also the activity of participating in this global culture of music-making technologies.

4.1 Using DAWs: Workflow and Creative Process

The informants describe using DAW as a personal creative process wherein the music therapist training, knowledge and experiences can determine what equipment they use and how they work. However, there are some similarities, of which I will try to elucidate in the forthcoming section which is divided into 1) planning and preparation 2), knowledge, training and technical problems, 2) freeing up attention: a "third" band member, and 4) GUI: visualising the non-represented.

4.1.1 Planning and Preparation

The informants describes routines for planning and preparation regarding mainly two topics: 1) setting up equipment, and 2) rehearsing or preparing between sessions. Informant 4

describes his ecology of instruments to which are interfacing the DAW is carefully and conveniently in order to optimise his workflow.

Informant 4: I have everything set up so that it doesn't take so long to get started. Everything connects to this 16 channel USB interface/mixer: two synths, a vocal microphone and a drum kit etc. So regardless of where the clients decide to run and what instrument they want to play. I will be ready to unmute a track and record it immediately. Setting things up is essential to be able to achieve an expeditious workflow.

In this description, the music therapist is similar to an architect who plans for the utility of a space. Informant 1, similarly, explains how everything is connected in a way that allows for an uninterrupted creative process.

Informant 1: Everything here is connected to an interface. I set up a session in Ableton, and we can improvise together from 10-60 minutes and spend the end of the session to listening back to the recording.

Thus, a music therapy room should be set up to facilitate a workflow optimised for avoiding the risk of losing the client's patience and attention in the creative process. Although the informants describe their method of working as "slow therapy", a rapid workflow wherein a lot of micro-tasks (task shortcuts, i.e.) are done in a high speed, sometimes without the client's knowledge is favoured. Informant 4 describes the experience of an insufficient workflow with a client.

Informant 4: When a client takes the initiative, I have experienced in the past that I'm not able to work quickly enough. Situational factors like that can cause clients to lose patience and focus. If you don't pay attention to that and act on their initiative, you might lose them, and before you know it, the session will be over. They might not want to come back then.

Informant 4 also describes how setting up the room allows for spontaneity and a nonhierarchical creative process, wherein the therapist doesn't give directions but rather follow the intentions of the client.

Informant 4: If one of my clients spontaneously start to play an ostinato on a keyboard. I will listen for the good parts and capture them by pressing "record", then warp it and then play it back. And the client, might turn and look at me surprised. This can sometimes lead to interesting, multilayered compositions.

Informant 2 describe that some clients are motivated by how the room is set up, how good it looks, and of what quality the pieces of equipment are.

Informant 2: Many clients expect that music therapy is somewhat alternative, so when they realise we have Fender guitars, Vox and Marshall amplifiers, and a DAW they are surprised. In this way, preparing the music therapy room to look appealing to clients can be a factor in how comfortable and motivated they will be. Some clients describe it as the place of their dreams.

Mixing down the track was described by most informants as an important routine for preparation between sessions. The process of mixing here is also connected to searching for sounds and DSP of sounds such as equalising, compressing and adding reverb are described as ways of separating the sounds for better listening, but also just as a way of achieving the aesthetic ambition of the client. In this regard, mixing also is as a way of caring for clients.

Informant 3: I spend a lot of time mixing tracks between sessions. I see it as an important way of showing interest and affection for my clients.

Mixing down and exporting files to clients can also be a way of motivating a client to practice and prepare between music therapy sessions.

Informant 4: I will export the backing track to a memory stick so my clients can practice at home. This way, they might come prepared next time. I find that this also motivates them not to skip a session.

Practising at home can further be seen as a process of activism and empowerment. The client will actively take part and participate in the therapy process. A final aspect of preparing described by most of the informants is backing up. Informant 2 argue that losing files that are of great value to the client can have consequences to their health.

Informant 2: My big fear is to lose clients DAW project files, i.e. if my computer is to crash. I have the project on my computer, and we have worked extensively with it. And, these are things that mean a lot to my clients. If you lose these files, then that is a risk. I think it can be a strain that some clients will struggle with and, which perhaps also will be detrimental to their health.

4.1.2 Knowledge, Training and Technical Problems

Training and knowledge of how to use DAWs are described as a vital aspect in maintaining avoiding technical problems and maintaining the efficacy of music therapy. The range of possibilities available with a DAW is described as a double-edged sword, and the demand for knowledge of how to navigate in this jungle of opportunities is vital. The most likely limitation resides in the therapist, not the technology.

Informant 1: When you work in Ableton, the question is not whether or not you can do it, it's rather how you can do it.

Both technical knowledge of how to use a DAW efficiently and aesthetic knowledge of music production, DSP and contemporary styles of music are warranted. Informant 4 and Informant 2 describe in more detail what piece of pieces of knowledge are relevant for a music therapist.

Informant 4: When working with Ableton, you can do anything if you just know how to do it. [...] Not everybody needs to know which voice each microphone has and what frequency range it has. However, there is a point, i.e. to not overly distorting the audio signal, or not compressing the guitars too hard. Also, and perhaps more importantly, is knowing instruments, grooves and genres, navigating through vast libraries to find the "right" sounds to match the expression to different genres. Sonic material available in DAWs sound so good now that with the right amount of

knowledge and a skilled therapist to guide the process, you can almost make any client sound like anyone on the radio.

Similarly, Informant 2 argues that there is a threshold where a minimum of knowledge should be obtained in order to be able to work fluently with clients.

Informant 2: I don't think you need to learn everything, you need to learn just the right things to be proficient enough to work with a DAW well in music therapy.

Informant 3 warrants more training with DAWs and music production during music therapy education.

Informant 3: During my music therapy training, we had a single day workshop on working with production in a DAW. Imagine if it was the other way around. Nobody learns guitar in one day.

Throughout the interviews, the informants describe technical problems as a possible challenge when working with DAWs. Technical problems Informant 1 also describe also an opportunity for mutual collaboration with the client in a way where the asymmetrical client-therapist power relationship is equalised.

Informant 1: I have had technical problems in a therapy session that I haven't been able to figure out. I have spent most of the session trying to solve the problem; however, this presents the opportunity to involve the client. I will admit my limitation facing the problem saying "I don't understand anything right now. I have no idea what is happening. We have to figure this one together".

Furthermore, Informant 1 describes how these technical problems can be constructive and afford a more nonhierarchical style of therapy.

Informant 1: I show a human side of myself when I admit that I don't understand what is going on. The limit to my knowledge has been reached. And that can be a good thing in therapy, showing them a human side of me, my fallibilities and vulnerabilities

However, as Informant 1 described in the next example, technical problems are sometimes destructive.

Informant 1: Sometimes, I have thought to myself "this session has been a real mess." We didn't get to do anything that we'd planned. And, there's been no prerequisite for the client helping me with the problem. [...] I can sense their disappointment. They had hoped to do something during the session.

Informant 2 gives a similar description explaining how this can maybe be a contraindication for working with DAWs with clients.

Informant 2: Some clients have a lot of patience, some of them might have been in a studio before and are used to working, but some are impatient and expect me to work and fix things quickly. I have had sessions where I have had to sit 10-15 minutes, importing a drum loop correctly, or cutting the audio I have recorded. I think that that can be a challenge for some clients in music therapy. It may be a contraindication for some patients to work in that way.

4.1.3 A "Third" Band Member: Freeing up Attention

The informants work mostly in the same format, one hour sessions, one to one, once a week. The dyad format of therapy has two limitations in relation to live performances. Firstly, a dyad format limits the aesthetic expression available during live performances because it limits the number of instruments which can be played at a time. A second limitation is linked to the negotiation of multiple attentions during live performance. Consequently, there is a duality of foci which is negotiated between attending to the creative processes and musicking and the therapeutic process and relationship. Informants describe recording loops into a DAW, using pre-recorded loops within a DAW or programming MIDI loops within a DAW can be solutions to these limitations.

Informant 3 describe how drum loops can be a support to increase the potency of an aesthetic experience during improvisation.

Informant 3: I use DAW for programming drum tracks quick. I might play the bass myself. So the DAW becomes a sort of a "third" band member. I use this approach with a lot of different clients, but especially people who don't have any instrument knowledge and who might want to sing. It allows us to sound bigger than we can in a duo and it gives a feeling of playing in a band. It also frees up my attention, allowing me to be present in the spur of the moment.

This approach to using supporting loops is also described by Informant 2.

Informant 2: I have two iPads with GarageBand. Sometimes I will use the iPad to program a 4 bar drum loop real quick. Let's say my client wants to play the guitar. A drum loop, then, enables me to play the bass myself. The drum loop will work as a support.

However, the recording quality of the iPad and autoplay function is reported as lacking compared to more professional targeted DAWs.

Informant 2: I have also used the smart drummer function in GarageBand instead of drums when recording with iPads, which works great, but for recording the fidelity of sound quality is too low on an iPad. So with clients who want a more professional sound, we have migrated to Cubase. But this is good as a way of starting.

Informant 4 describes further how loops can facilitate the therapist attention in a band situation.

Informant 4: Music therapist look for the resources and positive potentials residing in our clients, and we try to establish a relationship through music. Insufficient level of skill to perform many simultaneous musical tasks might result in us spending all our attention on playing a guitar riff, leaving little or no attention to working on the client-therapist relationship.

Furthermore, Informant 3 describes how using loops spurred change in his routines for practice.

Informant 3: Earlier, I used to play the drums with my clients all the time. It was sort of my go-to instrument. I would play a steady beat, a safe and predictable structure that moved forward incessantly, something the client could trust and exist in. Now I don't do it that often. I will program a drum loop instead to put on. This frees up my attention, and I can focus on other things. I can be more present in the therapist-client relationship or add different textures to the music, i.e. melodic stuff.

In the description of Informant 3, loops as "third" band members have heuristic potential to increase the motivational context for learning to play an instrument. The increase in motivation is linked to aesthetic experience.

Informant 3: I also use a DAW a lot with clients who want to learn an instrument. I think it increases the quality of heuristic processes and makes learning more interesting and motivating. It's more fun to practice the two chords you just learned with a drum track and a bass track as an example. You can adjust the tempo easily to fit the clients level of skill. [...] If a client wants to learn guitar from scratch. This is a difficult instrument to learn, and I find it hard at times to maintain motivation. I use loops to maintain an aesthetic context for learning.

4.2.4 GUI: Visualising the Non-Represented

The informants describe the function of GUIs of DAWs to help to represent the non-represented through a visual output on a screen. Moreover, GUIs can be understood as the visual affordances of DAWs. Different GUIs represent waveforms, rhythm, melodies and entire compositions, among others, to be represented visually to the client. The visual representations can portray an image of the past, present and the future all while the music is played or recorded. Thus a change in the music is outputted visually and can be viewed in advance, and it can serve as a resource making abstract information cognitively more comprehensive. The informants describe how GUIs afford a screen-based collaboration process of pointing and communicating by showing. Informant 3 describes how visual

representations of rhythm in space and time work as a heuristic device with clients who want to learn to play instruments.

Informant 3: Music is abstract, and a DAW can structure the abstract into something visual and attainable. I have a client who is learning guitar now. He is excellent at learning chords, which notes to pick and what kind of fingering to use, but he struggles with rhythm. I have tried an embodied approach representing the beat by swaying my torso back and forth or stomping my feet while playing. However, I found it helpful using a DAW for a visual representation of beats. You can zoom in and see the beats of a bar and the transport needle passing them in real-time.

Furthermore, Informant 3 elaborates that it can be an important cognitive support for clients with mental illnesses.

Informant 3: The clients have complicated life situations. They may have been sectioned into a psychiatric hospital. They may have positive psychotic symptoms, and they usually have negative symptoms such as cognitive problems which can weaken their attention. They may have initiative and motivation for learning something new, but their situation is far from ideal for learning. Hence, all heuristic devices or learning aids that can provide a framework or structure that makes it easier to learn something are warmly welcomed. [...] The DAW ability to visualise sound comprehensively is helpful because it structures the abstract and releases it from the word of thought. If you're having negative symptoms such as cognitive problems, this can be very helpful.

Another aspect of GUI is illustrated by informant 4, who gives an interesting account of a client who used the GUI of MIDI programming window to draw music with a pencil much like a painting on a canvas or like a graphic score.

Informant 4: Making rhythms and chords with MIDI is done with a drawing tool. I had a client who was very into this. However, he didn't want to draw chords or rhythms in the traditional sense. Instead, he wanted to build these blocks, like legos, because it reminded him of when he played Minecraft. He draws music like an architect draws buildings; he made faces, maps and other stuff. My task then was to

try to move sounds in the drum rack in a way that would make sense out of this MIDI notation and sound interesting.

Lastly, Informant 4, points to that the familiarity and graphic expression of DAWs make them intuitive and attractive to clients. It's part of clients visual culture of digital aesthetics and expression to which they participate in.

Informant 4: Ableton looks cool to adolescents. It looks like an application you would find on your phone. Some of the pictures that show up, i.e. plugins, look familiar and are operated similarly to computer games they play or 3D drawing programs. So there's a connection between the GUI and youth visual culture and how they use technology.

4.2 Aesthetic Experiences

All of the informants describe DAWs as have seemingly infinite possibilities for sonic imagery because of two reasons: 1) range of sonic material available and 2) range of sonic malleability provided by DSP and adaptability of MIDI. Extensive libraries of sounds and loops, VSTs with genre referencing presets and DSP, and MIDI provides the therapeutic process with a wide range of different choices and processes which afford different aesthetic experiences. These aesthetic experiences can be both constructive and destructive in a therapeutic process.

4.2.1 Sounding Good: Attuning to Clients

All the informants gave accounts of aesthetic experience, or within different styles as a way of attuning to clients and investing in the relationship with clients. "Sounding good" in this context is not to be misconceived as an objective or "right" way of making things sound, but rather a subjective or intersubjective social construct. As stated by, Informant 4, "sounding good isn't necessarily the byproduct of good therapy", but It can be a positive contributing factor. Informant 1 describes how DAWs can be a tool for a music therapist in meeting client's expectations and musical identities.

Informant 1: DAWs provides simple, intuitive and rapid ways of making things sound good, regardless of genre. In Ableton, you have construction kits which are out-of-the-box and ready-to-go instruments made of sample packs. You can have a spot on 90s hip-hop or RnB instruments ready in no time. [...] It's about the expectations clients have in terms of which genre they want to do in music therapy. Hip-Hop and electronic music are examples of genres that have more electronic sonic cultures that are based on re-contextualising sonic material and using electronic sounds. To make this style of music, you need a DAW to be able to do that.

Informant 4 gives a similar description of how sound libraries and VST presets help him meet his client's expectations without hesitation.

Informant 4: If a client comes through the door and expects to make music that sounds euphonious within the next 25 minutes, you can do that with Ableton because there are complete libraries of sample packs with out-of-the-box loops ready to be used.

Furthermore, Informant 1 describe how clients preference for music is are interconnected with their actions. Using DAWs, therefore, is instrumental in attuning to clients preference for a genre through choosing instruments, sonic material and DSP or other mixing and techniques of synthesis. Clients' aesthetic intentions and initiatives become apparent through the different ways they choose to play instruments or select sounds.

Informant 1: I think it's vital to make things sound good. The sounds of a client aren't just sonic material; they are intentions. A guitar then is played in the context of artistic aspiration toward a specific style or a genre. DAW allows music therapist to focus on sculpting the sound on a higher level and can, therefore, help realise these intentions. It's essential then that the music therapist possesses the knowledge to accommodate clients aesthetic aspirations, or at least to be able not to ignore them.

Another aspect pointed out by Informant 3 is the adaptability of compositional ideas when using MIDI processing, i.e. if the clients are to change their mind about.

Informant 3: If you record in MIDI format, you have the luxury of changing your mind at any point in the process. If you don't like the bass, it's two clicks from being gone. You sort of record the musical gesture rather than the actual sound—i.e. the bass line can become hi-hat or something.

In this way, MIDI can extend the sonic possibilities available from bodily movements. This adaptability of MIDI has immense creative and regenerative potential for musical ideas. Informant 1 argues in equal terms of the advantage of MIDI adaptability. Quantisation is described as a great tool for cleaning up rhythmical inaccuracies when capturing ideas.

Informant 1: Recording MIDI provide me with tools for quantisation, make things a bit more in time. I can also change the sound into a completely different instrument. The creative possibilities are always open when working with MIDI noting is ingrained in the stone.

Quantisation means that the rhythmical playing of a client doesn't have to be perfectly accurately played for them to realise their musical idea. In the further, Informant 2 describe how attuning to clients aesthetic preferences and intentions are a primary therapeutical principle which relates to relevant theory and practice in modern mental health settings.

Informant 2: Working within resource-oriented approaches to music therapy includes the perception that knowledge resides within the client. The client possesses aesthetic expertise and engagement, which is a resource to their music therapy process. Having a DAW then is crucial when approaching the client's interests for style or genre.

Similarly, Informant 3 argues using DAWs increases the aesthetic possibilities available in a music therapy session through DSP and sound libraries compared to acoustic instruments.

Informant 3: All of my clients have aesthetic perspectives of their own. They have a taste in music. DAWs enable me to realise that aesthetic to a large extent. It expands my aesthetic horizon of possibilities. In my experience using a DAW will allow me to attune to my client's aesthetic preference to a higher degree, contrary to using acoustical instruments, i.e. a bongo and a guitar, which I think are more limited sonically speaking.

Pointing toward the challenges of many aesthetic possibilities, Informant 3 clarifies that music therapist without sufficient training or knowledge of genre and styles might find these possibilities and aesthetic choices overwhelming. The responsibility connected to maintaining and renewing this knowledge is thus important.

Informant 3: There are infinite possibilities for production, and therefore the therapist must possess the knowledge required for them to guide the client through the creative process in a way that feels safe and meaningful.

4.1.2: Sounding Good: Increasing Participation and Motivation

Another aspect of aesthetic experience described by all the informants link hedonistic well-being, such as joy and pleasure, to increased participation and motivation. Informant 1 describe this premise in an eloquent and simple way.

Informant 1: Making music of which is similar to the music clients listen to or want to make is motivating.

This is further associated with how therapeutic goals are facilitated by having fun.

Informant 1: An important aspect of music-making in therapy can be liking what you do. If I like it and if the client likes it. Then it is fun to do. Often then, they like the music we make, and that reinforce the therapeutic goals we are working towards.

Informant 3 goes further in arguing whether DAWs and music production are essentially what some clients expect from music therapy and therefore also what motivates them.

Informant 3: Negative symptoms such as lack of motivation is one of the primary criteria for being prioritised for music therapy at this facility. Most clients come to me because they are slightly motivated to work with music. My task then is to maintain the motivation at least and hopefully increase it. I think, if it wasn't for Logic, I would have an increasing problem with maintaining the motivation for all of my clients because I wouldn't then be able to do what they want to do.

Informant 2 argues similarly.

Informant 2: I think, especially with the laptop generation now, who are already clients now, but they will only increase in numbers. It's increasingly important that we can offer them activities which they find motivating.

Informant 2 illustrates how the link between aesthetic experience and motivation can have serious implications in the lives of people who are at risk of committing suicide.

Informant 2: When working with clients with serious mental illness, motivation is essential. It's about getting them to showing up at music therapy sessions at all. It's about getting them to want to get out of bed, take a shower and go outside. A lot of them don't leave their flats often, and they struggle to be active. Also, several of them have thoughts of suicide. Having a studio where you can come to make music and have the opportunity to make it sound just as good as profession artist sound is both fun and motivating. It's like an amusement park. [...] In the extreme consequence, it can be the difference between life and death. If you can get clients motivated for doing something, it is essential. I think a lot about the risk of suicide. To me, preventing my clients from committing suicide is one of the goals of music therapy. I have lost 2 or 3 clients in the years that I have worked, and, I have thought, "damn it, I could have done more".

This participation in making music is further also related to being part of a global culture of aesthetic expression to which clients' identify. Client's cultural identity can be fragile, and it is important that therapists' have the knowledge to treat them respectfully to avoid

misunderstanding.

Informant 1: Sounding good is paramount. I work mostly with young people and music is part of their culture and identity. Clients who attend music therapy here have a taste in music in which they identify. So if what you make ends up sounding like a cheap copy of something they like and identify with. Then that might not be a good start for developing a relationship.

Informant 3 has a similar experience of not being able to log on to the client's aesthetic preference.

Informant 3: I have tried several times to make hip-hop with just an acoustic guitar. It just doesn't sound good, and you end up losing clients' that way. A music therapist who doesn't understand the client's music isn't a good point of departure for therapy. I think we have to adjust with the times. In 2019, hip-hop and EDM are the two biggest popular genres in the world, and you need a DAW to make this music.

4.1.4 Sounding Bad: A Reality Check

Although, as stated by informant 4, "good therapy" does not necessarily correlate with "sounding good", "sounding bad" can be associated with negative experiences and be destructive to the therapeutic process. Both Informants 1 and 3 give accounts of clients that are vulnerable to their subjective defeats when listening back to a recording of themselves. In this regard, the responsibility and knowledge of music therapists are important.

Informant 1 explains how listening back to a recording can be an unpleasant meeting with reality.

Informant 1: To some patients, it can lead to a reality check regarding their level of musicianship. They might not have sounded like they anticipated. When playing together in the spur of the moment, they might experience themselves as better than when they listen back. They believe themselves to be better players.

This notion of a client's unmet expectations is also described by Informant 2, who give two examples from his practice.

Informant 2: One patient, she had made a song. We recorded it, and when she listened to it, she could hear that her singing was out of tune. Another patient played an instrument. We recorded it, and when he listened to it, he could hear that it didn't sound as good as he expected. He was depressed for months after that and quit the instrument he had practised and played for many many years. I don't know if he ever started playing again. The first patient, she quit singing. At least for her entire stay at the hospital.

Informant 2 gives a similar description from his own personal experience of recording.

Informant 2: It's a reality check. It can hit you in the face. When you play, and I know this from my own experience as well, I can get disappointed when I hear recordings of myself of which I thought sounded good. It sounds good in the context of being inside the moment, but when it is played back with a slightly different sound outside the context of the moment without the feelings connected to the experience, it sounds worse. I have experienced that a lot as a musician doing recording sessions in a studio.

4.3 Competent Clients: Using Clients' Strengths and Resources

An important aspect of music therapy in a mental health setting is using client resources. The informants describe that clients have technological and cultural knowledge from the use of DAWs in their everyday life and using DAWs in therapy is therefore also a knowledge which clients can learn and bring into their everyday life.

4.3.1 Competent Clients'

Informant 1 emphasises clients' knowledge of computers as a resource in therapy because of familiarity.

Informant 1: Everyone who comes here knows how to use a computer. Not everyone who comes here knows how to play an instrument. That knowledge is transferable into music-making with a DAW.

Informant 4 further describe clients' with an independent level of skill.

Informant 4: Some of the clients who come here are independent enough that they need my help with any of the music production bit.

Informant 1 also gives an account of clients who teaches the therapist new things.

Informant 1: Some clients start from scratch, and I teach them as we go, other clients know more than me, and teach me stuff.

4.3.2 DAW from Everyday Life

Informant 2 describes that clients experience with DAWs from their everyday life before coming into therapy can be related to a positive identity and agency.

Informant 2: I've had clients who have worked with programming and sampling to make grooves. Some clients will say: "Oh, FL Studios, I'm good at that!".

Informant 1 describe clients who use DAWs in everyday life also have a preference for this way of making music.

Informant 1: Several of the clients who come here have experience with a DAW from their everyday life. Some have used Cubase, some Reason and some even have experience using Pro Tools. So the fact that I have a DAW here is sort of another possible activity on a list of things to do in music therapy, like any of the other instruments I have here and I depend on a DAW to meet those clients.

Informant 3 points to that more and more clients that have experience with DAWs and therefore, naturally want to use DAWs in music therapy.

Informant 3: It's an instrument now on the same line like a guitar, a piano or whatever. Imagine if I didn't have any guitars or piano here?

Informant 1 points toward DAW being a common ground, something relatable between therapist and client.

Informant 1: A lot of the clients I work with have personal experience with music-making in DAW software. A lot of them are familiar with Ableton Live. So it is a platform they know. The interest for music-making in a DAW then is something we have in common.

Informant 2 describes meeting clients who bring their own laptops.

Informant 2: Clients who have computers are usually familiar with GarageBand or Logic, and they want to be able to bring the recorded files we do in my music therapy studio home to continue their work with them there.

Informant 1 describes the DAW in relation to a compositional process in which the client can be in the driver seat.

Informant 1: Some clients have extensive knowledge of how to get things done. They are people who own a laptop and spend a lot of time making electronic music at home. They will bring their projects from home, and we work together on their music here. In this case, I will observe from the outside rather than supervising them or teaching them to perform tasks. In my experience, this works very well.

Informant 2 describes music-making processes with clients who "press all the knobs themselves" and have a high level of agency and independence.

Informant 2: The last client I worked with brought his computer to use the facilities here. He plugged his computer into the audio interface here, rigged up microphones

and recorded. Often we record live improvisations. He goes back home, where he will edit the recordings, process them with effects, put reverb on, mix it and master it. When he comes back next session, he will show me, and what he has done and I will give him feedback. And then he might publish the track on a website he runs. In this case, I haven't pressed any buttons or turned any knobs. The production is entirely his.

4.4 Making Things and Connectedness

All the informants gave descriptions of the recording as a cultural artefact of subjective meaning to clients'. A recording is like a sonic photograph, documenting positive achievements or memories or a cultural artefact that affords social participation and communication contenting with people beyond the therapy room.

4.4.1 Documenting Positive Events, Memories and Achievements

Like taking a photograph of your family becomes a cherished memory, documenting a positive feeling during a performance with someone can be sort of an act of archiving a positive memory. Informant 1 describes the recording as documenting positive memories and agency.

Informant 1: In my experience, when you have a good time and have good performance with a client, it's nice to have a recording of it that you can listen back to and think. "Yes! This is good." You might forget some detail of what you did before next time. So it allows you to go listen back and say: "what did you do here?", or "this recording sounded good".

Informant 4 illustrates how the musical catalogue of a client's productions can serve as evidence of achievements, like a CV.

Informant 4: Let me show you. (Showing me a file folder on the screen of his computer with a lot of files) This is last semester. And all the project folders are unique. It's a lot of music. I see this client four days a week, but this is a lot still. This

is a client who is not in school. Just the fact that every time we enter the folder to save a project and see the vast amount of material.

Me: It's like a CV.

Informant 4: Yes. Exactly. And this is a person who doesn't have much to show for. He didn't attend any of the two English exams he had this semester, but, he wrote 40 tracks with me. [...] A lot of my clients might sit in their room an entire day. They are outsiders of society, and a lot of them feel stigmatised and worthless. The feeling of mastery achieved through hard work and resulting in a product of which clients can show others. A lot of them take great pride in that.

Informant 2 has a similar experience and further relates to creating a product it to identity and normality.

Informant 2: A lot of my clients don't have a lot to brag about. They don't have a lot to show for like us. People, in general, are preoccupied with those things. For instance, I'm a music therapist; I have a degree; I have a CV. Many of my clients have none of those things. To be able to provide them with concrete evidence, manifested in music that they have made, that means the world to them. It's priceless.

4.4.2 Reaching Beyond the Therapy Room

The informants describe how DAW as an instrument for a recording and producing a cultural artefact can be a means for communication and collaborations with people outside of therapy. Informant 1 describes a client how making a backing track afforded client participation in a public competition.

Informant 1: I have had a client once who wanted to perform in a competition. So we collaborated on making a backing track for her audition. I edited out her lead vocal track, and we added some tracks with harmonising vocals. I think she ended up winning the competition.

Informant 2 describes how the production process affords cross-contextual collaboration and, i.e. participating in a professional milieu through collaboration with a professional producer can extend the clients social network.

Informant 2: This process exists in a bigger context. In addition to working on my computer, clients work on their personal computer and other peoples computers or other people working on their computers. So the music we make is part of a holistic collaboration process that ends with the music finally realised in an end product, e.g. a file or CD. [...] With one of my clients, we worked on a track. We recorded most of it here, and she brought it further into a producer in a professional studio. The producer at this studio was a friend of her, but he was also part of her support group. He put on some additional layers and mixed the track. Now she has come back to my studio, and we are continuing to working with with the track here. [...] Other clients have been recording in another studio before and have brought their sound files here so we can further develop tracks or mix down tracks. Some have tracks where they want me to play the drums over and record.

Further, Informant 2 describes how these processes can involve processes such as applying for funding for a project, which in turn can be considered a way of participating in society. Thus, the sum of these holistic processes aimed at musical goals, such as producing a CD also promotes hope and optimism.

Informant 2: I applied for funding to mix and master a track for a client. We had recorded the raw material in my studio, and it sounded ok. However, the competence of mixing a track as good as it deems deserving before being released is beyond my knowledge. But now we got enough funding for two days in the studio. So I have contacted a friend of mine who is running a professional studio, and I'm gonna go there with the raw material so he can do the mixing and mastering properly. The client hopes to get played on the radio.

Informant 2 further describes how this cultural artefact can be used to communicate and connect with milieus outside therapy context. This social activity resembles and can be seen as a metaphor for getting a job.

Informant 2: I had a client who had been invited into a band, but they were unsure about his level of skill. So he wanted to use music therapy to record a video of himself wherein he performed on guitar to show them how good he was.

4.4.3 Challenges of Publishing Music

All the informants describe two challenges related to publishing music: 1) negative criticism and 2) copyright. Clients' releasing music on social networks and other digital platforms risk negative criticism. It is important to inform clients of what this risk entails. Informant I describes music therapists role in publishing music involves a duality.

Informant 1: I try to inform my clients about the possible consequences of exposing themselves online by publishing music. And sometimes I warn them about it too. However, in reality, I'm merely making it easier for them to do it by giving them the material.

Informant 1 further describes his role in the process of negotiating and what reasons.

Informant 1: I compare my role to that of an editor in a newspaper or magazine. Sometimes I have to say "don't publish this online", its unfinished work. The quality of a demo is too low for publishing, and I'm sending it to the client merely so they can listen to it and rehears it. But still, then, some clients do it anyway. In this regard, It's outside of my control once I give them a file.

Informant 3 describe that clients can be vulnerable to the amount of attention their music gets after publication.

Informant 3: I have had situations where clients have released music on Soundcloud and as a result, are disappointed by how few people listen to them. [...] Then, my task as a therapist is to negotiate in a mild way how this works in reality. I think it's important to emphasise that we're doing this because it gives meaning and it is fun.

Informant 3 points toward that some clients may have a rose coloured image of reality and that it is important to explain how things work in real life.

Informant 3: I also share my own experience and knowledge about the music business. I play in a band. I have released music. I would never have released music if I didn't love doing it. Because I've spent 12 years doing it, and hardly made any money from it. Also, the process of achieving a million streams on Spotify involves, record companies and management, big businesses who spend hundreds of thousands NOK on promoting a certain artist. It doesn't just happen on its own.

Informant 4 also describes showing them the reality of online criticism.

Informant 4: I will sometimes show them commentary fields. It's not always a pleasant read.

Another issue of publishing which is described by informants, is copyrights. Informant 4 describes his process of informing about copyrights is a way of protecting the client's interests.

Informant 4: With the ones that want to release music online, I approach them by informing them about copyrights. One one hand, if you publish a cover song, then different legal issues can complicate things. On the other hand, if you publish an unregistered original, then you aren't protected. You have no rights to it if somebody wants to use it. This will increase their scepticism, and I can help them register their music.

A final, perhaps peculiar, example, Informant 2 elaborates on how paranoid clients can be prone to conspiracy thinking that someone will opportunistically steal their music.

Informant 2: I have patients who are paranoid. Patients who have said: "That song we made in therapy the other day. I think I heard it on the radio?". One of them called me and wanted me to delete all the files and all the music we had made together because he was afraid of someone stealing it. He was worried I might have forwarded the

music to someone or that my computer was hacked or under surveillance by someone who sold the music to make a profit.

To summarise, the informants describe, in different degrees, an increasingly DAW-centred music therapy practice where methods of songwriting and improvisation are integrated to meet a client's needs for expression in an increasingly technology-oriented contemporary music culture. Using DAWs is described as a structuring resource for musical experiences, aesthetic experiences, and experiences of community and culture. Thought on how this relates to the discourses of music therapy, music technology and mental health theory is discussed further in the next chapter.

5. Discussion

The purpose of this study is to explore how music therapists' in a mental health setting experience working with DAWs. In this section, I will discuss the empirical data presented in the previous chapter in relation to the research question and relevant theory and research as presented in Chapter 2. The discussion will be divided into three parts: 1) being process-oriented, 2) being resource-oriented, and, 3) being community-oriented. However, categorisation of these processes, as mentioned, are not straightforward because they are similar and often overlapping.

5.1 Being Process-Oriented

The discussion of using DAWs as a way of being process-oriented is related to two aligning processes, the creative process of musicking with DAW, and the process of mental health recovery. The findings here show that creative processes of musicking with a DAW — preparation, knowledge and training, using DAW as a "third" band member, and using GUIs to structure the non-represented aspects of music and composition— can afford recovery-processes such as relating to the CHIME framework.

Preparation such as setting up, post-production, mixing, combined with training and knowledge can afford therapeutic processes such as agency, empowerment, mutual collaboration, nurturing of positive emotions and flow. Preparation is essential in providing the therapist with the optimal workflow for securing therapeutic efficacy. In mental health recovery clients' should be active agents, rather than passive recipients of their treatment (Davidson et al., 2009). Slade (2009) describe agency as "the ability to see oneself as a person capable of choosing, initiating, doing and accomplishing things in the world" (p. 197). Facilitating access to participation and motivation is one of the key elements both creative and recovery processes (Leamy et al. 2011; Slade, 2009; Solli, 2014; Solli & Rolvsjord, 2015; Solli, Rolvsjord & Borg 2013). Client's intentions for musicking, sonic or musical ideas, etc., are volatile. As a consequence, systematic planning of set-up can structure a creative process optimised for meeting the client's intentions, thus increasing process of "hope and optimism for future" (Leamy et al. 2011).

Reports of preparation bear similarities to the literature (McFerran & Crooke, 2018; Noone, 2018; Sadovnik, 2014; Street, 2014; Weissberger, 2014). Street (2014) describe setting up templates 'inside' a DAW to limit the amount of clients choices, further increasing creativity and focus, thus allowing them to complete a composition in a session. Crooke and McFerran (2018) report that setting up DAWs for musicking in groups can take a significant amount of time both in advance and during a music therapy session and that speaker set up in group improvisation can result in sound identification issues and ultimately confusion. Noone (2018) note that clients showed frustration when set-up time dragged out and that computer issues caused setbacks and need for adaptations. Another similarity is that room set-up can be read from that accounts of DAW set-up are very personalised to fit both the therapist and clients needs (Crooke & McFerran, 2018; Kolstad, 2008; Noone, 2018; Solli, 2015; Viega, 2018). Thus, providing unique ways of strengths-based process. The similarity in individual nature of DAW set-ups — a therapeutic studio— and recovery-processes, can be read as an argument for further exigency of music therapy praxis accounts than with instruments that are less complex and individual.

Another similarity deduced from the findings and the literature is the similarity between 'workflow' and 'flow'. Ruud (2010) describes *flow* or "thirdness" and that a good workflow affords a good way of being-in time together in a therapeutic meeting (p. 32). Insufficient amounts of knowledge and technical skill can result in technical problems that stagnate the process and may, therefore, be an obstruction of flow. Notwithstanding, flow can also happen when the therapist and client mutually collaborate in solving a technical problem (Noone, 2018; Street, 2014). Perhaps this way of solving a technical problems can be described by Keil (1995) concept of *participatory discrepancies*. That the tension— the nonlinear irregularities — within the groove/workflow of the creative process move it forward with energy? Solli (2014) also makes this comparison between 'groove' and 'flow' and recovery and mental illness. However, preparing for efficacy in workflow, thus indirectly promotes well-being. I will, therefore, argue that exploring therapists and clients experiences of *flow*⁴ or *group flow*⁵ and workflow is an interesting point of departure for future research on using DAWs in music therapy. This type of research will contribute further to valuable knowledge

⁴ Csikszentmihalyi, M. (2002)

⁵ Sawyer, K. (2007)

to guide music therapy practice and implementing training in DAW for music therapists. Furthermore, I argue in line with McFerran and Crooke (2018) that the implementation of using DAWs in contemporary music therapy is essential. The global development of contemporary music culture and music technology, as illustrated by authors (Crooke, 2018; Holmes, 2012; Manning, 2004, Neill, 2002; Taylor, 2012; Strachan, 2017; Théberge, 2001) can also be seen as supportive of this argument since reproduction and composition of contemporary music are one of the important music experiences relevant to music therapy (Bruscia, 2014).

As such, the findings indicate that there is a link between technical problems and the efficacy of the therapeutic process, alining with authors who underline the paucity of praxis accounts in the music therapy literature (Crooke, 2018; Knight & Krout, 2016; Magee, 2014; Ramsey, 2014). The literature on music technology in therapeutic contexts can, in critical analysis, be read as 'native' to music therapy. At one level, this might seem natural because praxis accounts of using DAWs are deliberately disseminated to be comprehensible for music therapist at a novice/DIY level (Crooke & McFerran, 2018). Therefore, I support the statement that these entry-level resources of DAW practice are vital. Nevertheless, I will argue that technical accounts, such as Noone (2018) and Crook (2018), are underrepresented in the literature, and, yet essential to fully understand the implications DAWs can have on music therapy practice. Furthermore, a more technical and accurate language about DAWs in music will ensure the quality of music therapy research and the contribution and participation in a broader discourse on contemporary music technology, contemporary music and global culture. Finally, I will, therefore, also argue that future music therapy research would benefit from being less 'native' and look to authors in a broader interdisciplinary field of literature on DAWs. I think this will be beneficiary and deepen the discourse on technology in music therapy literature.

Another finding is how music therapist use recorded, prerecorded or programmed loops as a "third" band members/co-facilitators to structure the process of learning instruments or playing live performances. Freeing up a therapist's attention is interesting in that it can potentially enhance either a relational or an aesthetic dimension of a creative process. This finding is similar to Weissberger (2014) who describe how he used DAWs as a co-facilitator in music therapy with adults and elderly in a group setting. "The use of loops also freed me to

pass around instruments to the rest of the group accommodate microphones, add harmonic accompaniment on piano without stopping the flow" (p. 288-289). However, this finding remains underrepresented in the literature and accounts of using loops to enhance heuristic processes and increase motivation are not represented in the literature. This finding is significant because low motivation is one of the common issues clients with mental illness struggle with (Slade, 2009). Resources which facilitate learning new skills are linked to empowerment (Proctor, 2002), but also mastery, self-esteem and self-efficacy (Rolvjord, 2010, p. 60) . Developing empowerment is understood as "the process of people developing skills, knowledge, and strategies which will lead to them being "fully them", able to make unimpeded choices and decisions of their own which lead to healthier life" (Procter, 2002, p. 101).

Another interesting finding of this study is how DAWs structure the abstract employing a GUI. This finding echo the words of Macchiusi (2017): "the ephemerality of the sonic world is grounded by the computer screen which provides a particular visual conception of musical events to aid in the composition of music" (pp. 124-125). The GUI aids heuristic and compositional processes by structuring sonic and musical elements in time and space, thus also providing a visual language for communicating musical ideas in collaboration between client and therapist. Crooke (2018) mentions that the design culture of production technologies, such as DAWs are relevant to music therapy because it "offers accessibility to both clients with little musical background and limited physical or mental capacity, while still maintaining relevance to contemporary music culture" (p. 10). Noone (2018) is the only author in the music therapy literature to mention GUI. Noone (2018) goes into detail when describing how the GUI of VST instruments can be used when working with disabled clients. However, the focus in literature is generally on the physical aspect of controllers and instrumentality rather than on the cognitive advantage of DAWs visual affordances. This is significant because clients' in mental health settings can have negative symptoms such as too limited cognitive abilities (Slade, 2009; NDH, 2013) and their language for speaking about sonic textures and in musical-theoretical terms can be limited (Street, 2014). Thus, clients will often use metaphors relating to feelings and emotions when trying to describe what they want it to sound like (Viega, 2018). As the findings suggest, showing or pointing to the screen, when a client is unable to communicate what they want, might accelerate the process of understanding and meeting the client's preferences for genre, style or sound. As a result, the

GUI affords clients and therapist with an effective visual non-expert language to describe musical ideas. This can be viewed as a democratisation of music terminology, providing clients with an available language of expressions to describe and disseminate their musical ideas, hence increasing their agency and autonomy in the creative processes. An expert lingo of music, on the contrary, will further disempower clients, who often experience stigma and marginalisation as a result of mental illness, by adding to the asymmetrical therapist-client relationship. GUI, therefore, can be seen as a visual language of music which afford a resource-oriented mutual collaboration (Rolvsjord, 2010). It could further be argued that these mainstream devices are influencing the language used to describe music. Different DAWs use different terminologies for tasks. In Ableton we "export audio", and "warp", while in Logic the equivalent is "bounce" and "time-stretch". Notwithstanding, the findings related to GUI of DAWs remain nearly unexplored in the literature.

The second aspect of GUI is how the DAW democratises the creative process of music production through intuitiveness in design (D'Errico, 2016; Macchiusi, 2017; Strachan, 2017). Intuitiveness is described as "creative disintermediation whereby the intuitiveness of the application means less distance between musical idea and the realisation of that idea" (Strachan, 2017, p. 65). A premise for intuitiveness is limiting the number of choices in view. As pointed out by Normann (1998), "making everything visible is great when you have only twenty things. When you have twenty thousand, it only adds to the confusion. Show everything at once, and the result is chaos. Don't show everything, and then stuff gets lost" (as cited in Bell, 2015, p. 53). The maximalist nature of DAWs illustrates a paradox between creative freedom and creative indecision (D'Errico, 2016, p. 65). This relates to Street (2014) argument for using templates to limit the options. The visual output of a GUI can thus be viewed metaphorically as an iceberg where the 'tip' is the functionality in plain sight to the user, while a seemingly endless amount of features are hidden. Bell (2015) argue that the facile fallacy, the "misconception that music can be made seemingly instantaneously and effortlessly with a DAW" (p. 52), thus essential knowledge of DAWs affordances and anti-affordances/constraints are necessary in order to navigate without being manipulated by the availability of what is in plain sight. Weisberger (2014) and Bell (2015) raise the question, do you use technology, or does it use you?

A client's agency is a premise for mental health recovery (Slade, 2009). It can be argued that this indicates a need for an increased awareness of the responsibilities the music therapist have for their client's agency. The DAW can afford agency through accessible and intuitive ways of making music. However, the therapist's knowledge of affordances and anti-affordances can limit the client's agency as well. Artefacts are important the discussion of what implications the theories of material agency, such as ANT (Latour, 1991) and SPIDER (Ingold, 2008) have for music therapy can serve as an interesting point of departure for future research. Also, a critical reading of the results and the literature indicate a need for treating DAW as a musical instrument, with the same respect as other instruments, at the academic institutions teaching music therapy. As informant 3 say, nobody learns guitar in one day. I think that this training will do wisely to look to other sciences, music education, musicology, to expand the body of knowledge serving as a fundament for this further training and practice.

Finally intuitiveness of DAWs is based on tacit knowledge and computing skills such as clicking, dragging, copying, pasting, cutting, pasting, undoing opening, saving, etc., but also on the familiarity of design in its GUI.

[...] A composition can be visually mapped out, sounds can be dragged in or recorded, various sections can be zoomed, moved and manipulated and effects can be inserted. Interacting with the arrange window, seeing the entire landscape of a composition, the producer can visually step out of time, looking ahead for upcoming musical events and enacting manipulations on the fly as the track is playing. Through this compositional overview, the producer can audition any part of a track by pointing the DAW's playhead to any temporal location with the click of a mouse (Macchiusi, 2017, p. 125).

Informant 4, relates the design culture of computer games to that of a DAW suggesting that composing music is like a game. Music production can, therefore, be a plug-and-play experience to clients who possess this tacit everyday knowledge. In this way, tacit computer knowledge can become a health resource in music therapy (Rolvsjord, 2010; Ruud, 2010). This further makes a connection between client's craft, music therapy and everyday life (DeNora, 2000; 2007, Rolvsjord, 2010).

5.2 Being Resource-Oriented

The following discussion of how using a DAW affords being resource-oriented includes will focus mostly identity. Another finding relates to the the sonic and the self. The informants describe how aesthetic experiences provided by tools for sonic malleability and flexibility—the range of DSP, MIDI processing, VST instruments and sound libraries of loops etc.—as an important tool for attuning to the clients' musical identity. Attuning to clients musical identities is important is highly relevant from recovery perspective since clients are regarded as an expert of their own experience, hence, experts of their own music (Slade, 2009; Solli, 2015). Consequently, a musical identity can be considered a strength and resources which the client posses. Small (1998) uses the terminology musicking to emphasise music performative ontology. As such, clients' musical identities are performed through actions such as choosing sonic material or effects or intentions toward a style. Similar to Ansdell's (2005) "being who you aren't, [...] doing what you can't" (Rolvsjord, 2010, p. 118). Furthermore, in linking identity to Stige's (2012) concept of *health musicking*, identities can be considered as a way of performing well-being. Therefore it will be essential to acknowledge the client's musical identity for mutuality in collaboration (Rolvsjord, 2010). Notwithstanding this relevance, musical identity, within the field of mental health recovery is little researched (Hense, McFerran & McGorry, 2014; Leamy et al.; Slade, 2009; Solli, Rolvsjord & Borg, 2013). The multiple ways of using DAWs afford access to tools and techniques that allow seemingly endless aesthetic expressions make them well equipped for attuning to clients preference for style or genre. Thus an important point of departure for a therapeutic relationship wherein a client can develop a positive identity.

Although the topic of identity is a recurring topic in the music therapy literature and music technology (Crooke & McFerran, 2018; Kolstad, 2008; Noone, 2018; Solli, 2015; Street, 2014; Viega, 2018; Viega 2019), the dominant focus is directed at special needs and on accessibility for clients with physical disabilities (Burland & Magee, 2014a, 2014b; Noone, 2018), only a few reference focus on mental health setting (Solli, 2015; Sadnovik, 2014; Street, 2014; Viega, 2018). Noone (2018) highlight that the modularity and flexibility of DAWs as an advantage in accommodating clients aesthetic needs for expression. Other authors accentuate roles social identities afforded by social roles (Burland & Magee, 2014a, 2014b; Magee, 2014; Kolstad, 2008; Sadovnik, 2014; Solli, 2015; Street), which will be

discussed further under being community-oriented. However, only a couple of authors, focus on personal identity and self-expression through use with DAWs (Crooke & McFerran, 2018; Solli, 2015; Viega, 2018). Viega (2018) argue that endless sonic textures and material provide agency to clients who are "negotiated within the relational interactions between the songwriter, digital technology, and the music therapist within the therapeutic relationship" (p. 152). Identity can also be a way imagining possible selves (Markus & Nurius, 1986). Sonic imagery, thus, can be a way of imagining possible worlds and selves. Thus, endless possibilities for sonic imagery afford clients' with agency technologies for identity construction. Imagining a possible positive identity is equivalent to hope for a better future or dreams and aspirations. Both identity and hope are essential aspects of mental health recovery (Slade, 2009). Clients' can construct their identities through their own sonic possible worlds and sonic possible selves. However, the aspect of sonic material, identity and music-making with DAWs is a topic which remains underrepresented in the literature.

The vast potential, as illustrated by the present study and other authors (Crooke & McFerran, 2018; Noone, 2018; Viega, 2018), is an indication how the range of sonic material available, sonic malleability and adaptability of MIDI, provided by DAWs are highly relevant for attuning to, thus acknowledging clients musical identity (Crooke & McFerran, 2018; Viega, 2018). For this reason, I will argue that there is a need to expand the music therapy discourse on the role of the sonic in relation to identity, especially with focus on using digital tools for sonic manipulation. Investigation of the relationship between the sonic and the self should not be restricted to the discourse of digital technologies. However, in the context of a global culture of contemporary music wherein the creative processes of composition which are inseparable from technologies (Holmes, 2012; Taylor, 2012; Théberge, 2001), especially centred around DAWs, I will argue that DAWs should be a focal point within the discourse on music therapy and on music technology. Furthermore, the request for ideographic knowledge, including client perspectives on using DAWs and their possibilities for expression, should be a priority in further researching this topic. Although, contemporary music is specially relevant to music therapy (Bruscia, 2014; Viega, 2018), especially based on the grounds that hip-hop now is the most popular genre in contemporary music (Viega, 2014), this research should focus on a multitude of styles and genres.

It can be argued that the relationship between the sonic and the self could benefit from the theoretic field of sound studies. The discussion of the ontology of sound as *sonic flux* (Cox, 2018), *sonic agency* (LaBelle, 2018) and *sonic possible worlds* (Voegelin, 2014), give interesting alternatives to the sonic ontology, which is often viewed usually viewed as a materialist object — paradoxically even in music therapy by focus on music artefacts (Stige, 2012). I will argue that these perspectives should be explored for implications for music therapy. Another aspect of further exploration is listening. Viega (2014, 2018) argue that a creative mode listening, which relates to how sonic material is appropriated in contemporary music. As a consequence, music therapists must "listen to the imagery potentials within their sonic textures, hearing the restoration of adolescent identity within the soundscapes" (Viega, 2018, p. 158). Rather than listening to harmony and melodies, the focus is directed toward sonic qualities such as attack, decay, sustain and release and the what sonic material is selected and how it is mixed together (Viega, 2014). Thus, the sonic affordances provided by DAWs and other digital technologies arguably require a different listening sensibility from a music therapist. This may be an implication for further music therapy practices.

5.3 Being Community-Oriented

An interesting finding of the study is how the informants experience musicking with DAWs as a technology for creating cultural artefacts afford connectedness with friends, family, local musicians, global cultures, online communities and everyday life. This is significant since positive relationships, and social inclusion is one of the major goals of mental health recovery. Stige (2012) argue that "sense of self and agency is constituted through the internalisation and creative use of cultural artefacts in social contexts" (p. 188). Consequently, through a creative process of musicking, the musical ideas and identities of a client are rendered into cultural artefacts which can afford connectedness with individuals, communities, and cultures. Informants describe these musical artefacts, usually a CD or audio file, with metaphors such as a CV or a diploma. Recordings thus become palpable evidence of *expert by experience*. A cultural artefact, such as a single, EP or album, thus can afford participation and social inclusion in an expanding social network. Expanding a client's social networks, can, therefore, serve as an antidote to stigma, disempowerment and social exclusion. For this reason, musicking with a DAW can be linked to social capital (Procter, 2011) and social recovery (Slade, 2009). According to Rolvsjord (2010), social capital "describe the value of cultural

competence and participation as generating social participation and social networks that empower the individual" (p. 121). The relationship between making a musical product and connectedness seems to be established by both research and accounts of practice (Kolstad, 2008; Misje, 2012; Sadovnik, Solli, 2015; Viega, 2019). Sharing a CD is a way for clients' to communicate personal identity to others both in everyday life and in institutions; thus the CD afford to expand the social network of clients (Kolstad, 2008; Misje, 2012; Sadovnik, 2014; Solli, 2015).

Making, for example, an album also provide the client with social roles and responsibilities. Through making cultural artefacts, the client becomes an artist or producer. These social roles afforded by using DAWs are supported by the music therapy literature (Kolstad, 2008; Noone 2018; Sadovnik, 2014; Solli, 2015; Street). Solli (2015) point to that musicking with a DAW afford clients' with social agency through competent roles such as a musician, songwriter, producer, technician (p. 15). Social agency here is defined as "the ability to view oneself as a person capable of choosing, initiating, doing and accomplishing things in the world" (Slade, 2009, p. 197). These roles of being/becoming-someone can thus be seen as a social capital which can be negotiated both inside and outside of therapy (Procter, 2011). Procter (2011) argue that social capital is provided by music therapy indirectly through repairing communication skills, thus providing a proto-social capital called musical capital. Solli (2015), on the other hand, argue that the music therapy processes related to making an album resulted in evidence of real social capital because the social network of Marco was indeed expanded. This can also further be linked to a concept of identity capital. Tew (2013) argue that "identities may give us 'currency' in relation to wider social participation and also to membership of more specific sub-cultural groups; they may be key to social inclusion and accessing specific forms of bonding or bridging social capital" (p. 367). Moreover, this identity capital internalises the self-esteem clients need in order to enter new social settings (Tew, 2013). This relates Noone (2018), who notes that clients' suggested selling CDs "an indicative of pride in the music and the desire to share it with a community" (p. 212). Another way of sharing music is by publishing it online. This finding relates to Viega (2019) who describe how a client could connect with his family and friends through uploading songs onto SoundCloud. However, publishing music online can result in digital stress (Solli, 2015; Viega, 2019). Internet is "a virtual space with no boundaries" (Weinberg 2014, as quoted in Derrington 2019). Thus it is vital that music therapist can help clients' to set boundaries for

themselves. A fine-tuned reflexivity, similar to that of an editor of a magazine, towards publishing music online is thus warranted. Negative criticism and cyberbullying can lead to disempowerment and social exclusion (Solli, 2015; Viega, 2019).

Street (2014) describe therapist roles—therapist, operator, musician and sound engineer— and client roles—client/communicator, instructor, composer/musician and producer. Street (2014) argue that roles require sensitive reflexivity of music therapist pointing toward that some clients with mental illness, especially those with a history of drug abuse, might have delusional expectations. Sadovnik (2014) also point toward challenges related to the commercial connotations of the role as a producer. This can relate well to informant 3's emphasis on informing clients that the rationale for doing music therapy is to be meaningfully occupied and learn skills rather than becoming famous. I will further argue that these caveats illustrate that there is a complex web of roles related to making cultural artefacts which further might suggest that there is an exigency for further research on music therapy roles in mental health settings.

A grey area is the ethical issues related to producing and publishing music are of high relevance to music therapy. The question of whether who has ownership to music created in music therapy is also an ethical grey area between copyrights and clients needs. According to CREO (2017) professional guidelines for a music therapist in Norway §§ 2.2 states "when music is recorded or published publicly, the client's integrity, needs and rights should be secured (p. 2)" [translated by present author]. Further, "music therapist shall act according to laws of copyrights in relation to publishing music made in collaboration with clients (p. 2)" [translated by present author]. However, in music therapy, the relationship between the client's and the therapist's contribution is subjective and can be ambiguous. This relates especially to mental illness because clients might have. I will argue that there is a need for a deeper discussion of copyrights with clients in music therapy. This might especially relate to paranoid clients, as mentioned by informant 4.

Another aspect of connectedness is how musical and music and artefacts, such as a recording, is transferrable to social contexts outside of music therapy and thus a valuable resource for clients in their everyday life. Derrington (2019) argue that "creating a recording can allow for something tangible to be taken away from the session, shared, revisited, uploaded and

observed from a distance, in the same way, that adolescents instantly record, shared and respond to experiences in social media" (p. 170). This corresponds with the notion of being community-oriented in recovery-oriented mental health practice. Clients can use artefacts as a CV to audition for a band. Finally, I will argue, similarly to Aigen (2007, 2008) that sonic imagery provided by digital technologies affords connection with "a fundamental reality that exists outside the individual" [...], "something larger than themselves" (2007, p. 126). Aigen (2007) refer to identification with a value-based communities. I will argue that there are several value-based communities — Hip-Hop culture (Crooke, 2018, Viegas, 2016, Lightstone, 2012), DIY culture (Richards, 2013) and other contemporary music cultures (Holmes, 2012; Strachan, 2017) — which are intrinsically linked to digital technologies and DAWs.

6. Conclusion

6.1 Conclusions

First, this study contributes to deepening the discourse on music therapy and music technology by giving accounts and philosophies of music therapist and their praxis in a mental health setting by highlighting how music therapist in a mental health setting individual experience use the DAW with clients. The study suggests that using DAWs in music therapy can facilitate therapeutic goals and processes, especially those linked to agency, empowerment, mutual collaboration and connectedness. Using DAWs also afford processes wherein clients take action in their mental health recovery and learn skills which they transfer to everyday life. The study highlight the flexibility, adaptability and intuitiveness as essential qualities to which make them essential in the music therapists ecology of instruments. The theme of identity construction and sonic manipulation and connectedness through making a cultural artefact is highlighted explicitly as areas with which DAWs have a great potential therapeutic efficacy. The study suggests that the role of DAWs in music-making/composing is linked to the global development of music technology, contemporary music and global culture. Although there seems to be an increased interest for DAWs in literature in recent times, the field of music technologies and DAWs are under-researched. I have highlighted some areas and suggestions for further exploration and future research in Chapter 5. However, I think that the individual and modular nature of DAWs call for a broad range of foci. Furthermore, hope that in the future there will be a music technology network wherein music therapist can exchange experiences and that there will be a further focus on technology in music therapy educations.

6.2 Limitations

One limitation to this study is the scope of the study. The results invite for a more in-depth discussion on several topics that deserve more attention. A second limitation is linked to how the empirical data are sometimes laden with vicarious statements where the informants

interpret what clients think; this type of vicarious experience at best inaccurate and at worst incongruent with, what clients actually think. It can be argued that these vicarious statements, on a political level, further marginalise and disempower clients through denying them a voice of their own is incongruent with the values current theoretical perspective in humanities and mental health (Rolvjord, 2010; Ruud, 2010; Slade, 2009). For this reason, the better way to understand these intersubjective experiences of health musicking would arguably be to have a selection of informants which included both therapist and clients first-person perspectives.

Notwithstanding this apparent contradiction, I believe the findings of the present study still present valuable understanding of meaningful phenomena through my subjective interpretation of music therapists' experiences. A second limitation is linked to the scope of the thesis. A broader scope would allow for a more extensive selection of informants in terms of age, gender and cultural background, but also a more in-depth discussion of the results.

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Appendixes

Appendix 1: NSD Approval Letter

Meldeskjema for behandling av personopplysninger

25/04/2019, 21:26



NSD sin vurdering

Prosjekttittel

Record and Recovery: en kvalitativ studie om bruk av computerstudio som musikkterapeutisk verktøy i en recovery orientert mental helse praksis

Referansenummer

790148

Registrert

11.02.2019 av Bård Aarvik - Bard.Aarvik@student.uib.no

Behandlingsansvarlig institusjon

Universitetet i Bergen / Fakultet for kunst, musikk og design / Griegakademiet - Institutt for musikk

Prosjektansvarlig (vitenskapelig ansatt/veileder eller stipendiat)

Gary Ansdell, garyansdell@gmail.com, tlf: 55580000

Type prosjekt

Studentprosjekt, masterstudium

Kontaktinformasjon, student

Bård Aarvik, bard.aarvik@me.com, tlf: 4729494

Prosjektperiode

15.08.2018 - 15.05.2019

Status

13.02.2019 - Vurdert

Vurdering (1)

13.02.2019 - Vurdert

Det er vår vurdering at behandlingen av personopplysninger i prosjektet vil være i samsvar med personvernlovgivningen så fremt den gjennomføres i tråd med det som er dokumentert i meldeskjemaet

med vedlegg den 13.02.2019. Behandlingen kan starte.

MELD ENDRINGER

Dersom behandlingen av personopplysninger endrer seg, kan det være nødvendig å melde dette til NSD ved å oppdatere meldeskjemaet. På våre nettsider informerer vi om hvilke endringer som må meldes. Vent på svar før endringer gjennomføres.

TYPE OPPLYSNINGER OG VARIGHET

Prosjektet vil behandle alminnelige kategorier av personopplysninger frem til 15.05.2019.

LOVLIG GRUNNLAG

Prosjektet vil innhente samtykke fra de registrerte til behandlingen av personopplysninger. Vår vurdering er at prosjektet legger opp til et samtykke i samsvar med kravene i art. 4 og 7, ved at det er en frivillig, spesifikk, informert og utvetydig bekreftelse som kan dokumenteres, og som den registrerte kan trekke tilbake. Lovlig grunnlag for behandlingen vil dermed være den registrertes samtykke, jf. personvernforordningen art. 6 nr. 1 bokstav a.

PERSONVERNPRINSIPPER

NSD vurderer at den planlagte behandlingen av personopplysninger vil følge prinsippene i personvernforordningen om:

- lovlighet, rettferdighet og åpenhet (art. 5.1 a), ved at de registrerte får tilfredsstillende informasjon om og samtykker til behandlingen
- formålsbegrensning (art. 5.1 b), ved at personopplysninger samles inn for spesifikke, uttrykkelig angitte og berettigede formål, og ikke behandles til nye, uforenlige formål
- dataminimering (art. 5.1 c), ved at det kun behandles opplysninger som er adekvate, relevante og nødvendige for formålet med prosjektet
- lagringsbegrensning (art. 5.1 e), ved at personopplysningene ikke lagres lengre enn nødvendig for å oppfylle formålet

DE REGISTRERTES RETTIGHETER

Så lenge de registrerte kan identifiseres i datamaterialet vil de ha følgende rettigheter: åpenhet (art. 12), informasjon (art. 13), innsyn (art. 15), retting (art. 16), sletting (art. 17), begrensning (art. 18), underretning (art. 19), dataportabilitet (art. 20).

NSD vurderer at informasjonen om behandlingen som de registrerte vil motta oppfyller lovens krav til form og innhold, jf. art. 12.1 og art. 13.

Vi minner om at hvis en registrert tar kontakt om sine rettigheter, har behandlingsansvarlig institusjon plikt til å svare innen en måned.

FØLG DIN INSTITUSJONS RETNINGSLINJER

NSD legger til grunn at behandlingen oppfyller kravene i personvernforordningen om riktighet (art. 5.1 d), integritet og konfidensialitet (art. 5.1. f) og sikkerhet (art. 32).

Dersom du benytter en databehandler i prosjektet må behandlingen oppfylle kravene til bruk av databehandler, jf. art 28 og 29.

For å forsikre dere om at kravene oppfylles, må dere følge interne retningslinjer og/eller rådføre dere med behandlingsansvarlig institusjon.

OPPFØLGING AV PROSJEKTET

NSD vil følge opp ved planlagt avslutning for å avklare om behandlingen av personopplysningene er

avsluttet.

Lykke til med prosjektet!
Tlf. Personverntjenester: 55 58 21 17 (tast 1)

Vil du delta i forskningsprosjektet ”Record and Recovery”?

Dette er et spørsmål til deg om å delta i et forskningsprosjekt med arbeidstittelen “Record and Recovery”. Prosjektet handler om musikkterapeuter bruk av digitalt computerstudio (digital audio workstation) i recovery orientert mental helse praksis. I dette skrivet gir vi deg informasjon om målene for prosjektet og hva deltakelse vil innebære for deg.

Formål

Formålet med studien er å undersøke hvilke erfaringer musikkterapeuter har med bruk av digitalt computerstudio (digital audio workstation) i recovery-orientert mental helse praksis og hvilke fordeler eller utfordringer dette innebærer. Målet er å få økt kunnskapen omkring bruk av computerstudio i musikkterapi i denne spesifikke konteksten og også muligens da også implisere om kunnskapene også er nyttig eller unyttig andre kontekster. Videre mål er å se om det er sammenhenger mellom bruk av computerstudio i klinisk praksis og relevant forskning og teori i recovery-orientert mental helse konteksten.

Hvem er ansvarlig for forskningsprosjektet?

Fakultet for Kunst, Musikk og Design, v/ Universitetet i Bergen er ansvarlig for prosjektet.

Hvorfor får du spørsmål om å delta?

Du får forespørsel om å delta på bakgrunn av at du jobber i den aktuelle konteksten formulert over og at du har kunnskaper med å bruke computerstudio i klinisk praksis over 1 år eller mer. Rekrutteringen er nettverksbasert. Såkalt purposive sampling. Henvendelsen vil bli sendt til ca 8 personer hvorav de 4 mest aktuelle vil bli intervjuet i forbindelse med datainnsamling til studien.

Utvalgsriterier:

- Musikkterapeut med master i musikkterapi
- Minst 1 års klinisk erfarings som musikkterapeut.
- Jobber eller jobbet i recovery-orientert mental helse praksis.
- Minst 3 års erfaring med bruk av computerstudio.
- Både kvinner og menn i utvalget, om mulig.

Hva innebærer det for deg å delta?

Deltakelse i studien innebærer et personlig intervju med hver respondent. Intervjuet vil vare 45-60min og det vil bli tatt lydopptak med en håndholdt opptaker (uten internett tilkobling). Utover navn yrke, alder og kjønn, vil ingen personlig informasjon innhentes. Den personlige informasjonen vil bli anonymisert.

Det er frivillig å delta

Det er frivillig å delta i prosjektet. Hvis du velger å delta, kan du når som helst trekke samtykke tilbake uten å oppgi noen grunn. Alle opplysninger om deg vil da bli anonymisert. Det vil ikke ha noen negative konsekvenser for deg hvis du ikke vil delta eller senere velger å trekke deg.

Ditt personvern – hvordan vi oppbevarer og bruker dine opplysninger

Opplysningene om deg vil bare bli brukt til formålene vi har fortalt om i dette skrivet. Vi behandler opplysningene konfidensielt og i samsvar med personvernregelverket. Disse opplysninger vil kun være tilgjengelig for undertegnede og veileder for masteroppgaven. Personopplysninger og opptak vil bli oppbevart som en kryptert fil på en ekstern hardisk som er innelåst et trygt sted. Personopplysninger og lydopptak fra intervjuene vil bli oppbevart på ulike steder slik at de ikke kan kobles til hverandre. Respondentene vil kun kunne gjenkjennes ved evt. publikasjon på et senere tidspunkt eller med mindre de ønsker det selv. Personopplysninger vil bli anonymisert.

Hva skjer med opplysningene dine når vi avslutter forskningsprosjektet?

Prosjektet skal etter planen avsluttes 15.05.19. og alle opplysningene vil bli slettet etter prosjektslutt.

Dine rettigheter

Så lenge du kan identifiseres i datamaterialet, har du rett til:

- innsyn i hvilke personopplysninger som er registrert om deg,
- å få rettet personopplysninger om deg,
- få slettet personopplysninger om deg,
- få utlevert en kopi av dine personopplysninger (dataportabilitet), og
- å sende klage til personvernombudet eller Datatilsynet om behandlingen av dine personopplysninger.

Hva gir oss rett til å behandle personopplysninger om deg?

Vi behandler opplysninger om deg basert på ditt samtykke.

Hvor kan jeg finne ut mer?

Hvis du har spørsmål til studien, eller ønsker å benytte deg av dine rettigheter, ta kontakt med:

Prosjektleder:
Bård Aarvik
Tlf: 47 29 49 49
Epost: bard.aarvik@me.com

Veileder:
Gary Ansdell
Tlf: 55 58 00 00
Epost: garyansdell@gmail.com

Samtykkeerklæring

Jeg har mottatt og forstått informasjon om prosjektet, og har fått anledning til å stille spørsmål. Jeg samtykker til:

- å delta i et personlig intervju på 45-60 min.
- at det blir gjort lydopptak av intervjuet.

Jeg samtykker til at mine opplysninger behandles frem til prosjektet er avsluttet, ca. 15.05.19.

(Signert av prosjektdeltaker, dato)

Appendix 3:

Signal Chain Glossary and Technical Terms

A consequence of this interfacing and multifaceted nature of DAWs emphasised in both definitions is that it may lead to confusion. I will therefore go through a basic signal chain of hardware and software common to DAWs and some technical terms related to DAWs. A signal chain in its basic form can be described as a chain of events in which direction the signal is transmitted from input through processing to output.

Inputs:

Audio input refers to any kind of sound source which is tangibly controlled by either the client or the music therapist. Audio input is recorded from usually a microphone with an or an instrument through an internal or external audio interface with analog-digital converters (ADC) and digital-analog converters (DAC) which transform the audio signal from analog to digital and vice versa.

MIDI input refers to a MIDI signal which is tangibly controlled by either the client or the music therapist. MIDI input is recorded from a MIDI controller where signals are triggered by gestures.

MIDI Controllers tend to have gestural controllers (dials, faders, X/Y pads, grids of buttons, foot switches, etc) with associated MIDI control messages as well as keys or pads for sending note and velocity information. They may also have buttons for transposing by octaves and semitones or for controlling the overall velocity of the keys. (velocity is a quantifier for the level of force to a strike a key or a pad, determining the relative intensity of the triggered sound. MIDI controllers can also be configured to control specific parameters within the DAW either through MIDI mapping or through Native mode. **Native mode** is when the controller automatically assigns a gestural control to the most contextually appropriate parameter at a given time (i.e. whatever set of parameters is open on-screen) Most DAWs also have a computer keyboard MIDI function, i.e. in Ableton Live and Logic X the middle and to row of the **QWERTY** layout can act as a MIDI keyboard (Noone, 2018, p. 28).

Processing

Processing refers to how the audio or MIDI signal is “transformed or transduced once it has been generated and transmitted” to the DAW (Noone, 2018, p. 29). Processing can either be done through **analog signal processing (ASP)** or, more commonly, through **digital signal processing (DSP)**. DSP is usually done by sampling a piece of the original audio signal, usually referred to as the ‘dry signal’, process it, and play it back slightly behind the dry signal. The processed signal is referred to as the ‘wet signal’. There are a variety of ways of methods of DSP, the most common methods being **dynamic processing** (compression, limiting, expander, envelope), **spectral processing** (filters, equaliser) and **time based processing**, (delay, reverb, chorus, phaser, flanger, ring-modulation).

Audio:

Audio signals refers to an electrical analog audio signals such as are transmitted from microphones, guitar, synths or mp3 players to an audio interface, wherein it the signal is transformed from analog audio to digital audio, and further routed to dedicated audio tracks in the DAW. Audio interfaces usually have an array of different input connections for audio input signals, such as phono, 1/4 inch jack, XLR inputs (Noone, 2018).

Audio Effects:

Audio effects refer to **DSP plug-ins**, either built-in or third-party **VSTs (virtual studio technologies** i.e. DSP effects, MIDI effects, and instruments) Plug-ins and VSTs usually have presets, settings which are set in advance, corresponding with with common ways of manipulating sounds. Presets are often related a specific way sonic material is manipulated usually to match a genre or an aesthetic. DAWs such as Ableton Live also have effect racks, which are presets for a combination of different audio effects (Noone, 2018).

MIDI:

MIDI, short for musical instrument digital interface, is a standardised communication protocol for transmission and reception of music data. MIDI signal is routed from a

MIDI controller to a MIDI track in the DAW allowing control over musical instrument VSTs, audio effects, MIDI effects or global settings such as stereo panning or volume control. MIDI also let you synchronising hardware and software devices to a shared time called a 'clock', or controlling audio effects.

Intimacy of MIDI control:

MIDI values range on a scale from 0 to 127, i.e. the basic 'key pressure' message is contains pressure value from 0, no pressure to 127, maximum pressure (Manning, 2004 p. 71). Consequently, key pressure from in MIDI messages is quite coarse. Moore (1988) argues that MIDI suffers from a dysfunction in lack of control intimacy. Control intimacy "determines the match between the variety of musically desirable sounds produced and psychophysiological capabilities of a practical performer" (p. 21). Control intimacy can further confuse "the performers subjective impression of the feedback control lag between the moment a sound is heard, a change is made by the performer, and the time when the effect of that control is heard" (p.21). This can lead the performer or to an experienced a lack of intimate control over the instrument and lead to problems of sound source identification, in other terms "who the speaker is". This lack of control intimacy is arguably some of the reason for music therapist prejudice for music technology. For further technical elaborations of MIDI or control intimacy see Manning (2004), Moore (1988) and Fels (2003).

MIDI effects:

Similar to audio effects there are MIDI effects. MIDI effects range

MIDI programming:

MIDI programming refers to when music is programmed rather in a piano roll than recorded real time with a MIDI controller. In most DAWs this is similar to painting where one uses a brush to paint in the notes. Usually, the notes variation in velocity is displayed with a variance in colour.

MIDI and key mapping:

Mapping of MIDI and keyboard controls can be done in most DAWs. This function is especially easy to use in Ableton Live. MIDI mapping is a mode within a DAW whereby MIDI control signals can be assigned to a MIDI controller.

Global Settings/Project Settings:

Global settings are preferences that control

Libraries:

Libraries are integrated containers of prerecorded loops, sounds, VSTs, audio effects and

Quantisation/Warping:

Quantisation and warping refer to a features of standardising timing in a DAW project. The audio and MIDI tracks are analysed for tempo and timing information and set to be moved to the nearest rhythmic variable, i.e. 16th note, in the global settings. (Noone, 2018)

Output:

After the signal has run through the aforementioned stages of being input and processed it can be **monitored** out live, **recorded**, or **exported** to other media. Monitoring refers to outputting the signal to a set speakers of speakers.

Exporting, Rendering or Bouncing:

These are some of the terms (different terms are used for different DAWs) used to describe how one export audio files from a DAW. One can export all individual instruments or tracks into one file or into several files of desired format. Most common formats is WAV and mp3. This is usually done when if a client wants a finished product, to distribute online or print on a CD, or if a client need a demo or backing track for rehearsing with at home.

HCI:

Human-computer interaction.

GUI:

Graphical user interface (GUI) such as DAWs also have a visual output that can be viewed on screen allowing users to view graphical representations of i.e plugins, sound,