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## **Developing a conceptual framework for online jazz piano teaching at a University of Technology**

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<p>The purpose of the thesis was to develop a conceptual framework for online jazz piano teaching at a University of Technology (UoT) music department. The objectives encompassed identifying the essential elements of current online jazz piano curriculum at the higher education level, identifying the thematic elements that influence instructional design and facilitation in online jazz piano courses at the higher education level, and developing a conceptual framework for online jazz piano teaching to suit the specific challenges of music students at the UoT.</p> <p>The theoretical framework was based on the constructivist approach which allowed knowledge to be constructed through meaning and was fundamental in determining an online music learning environment that catered for the specific challenges encountered by music students at a UoT.</p> <p>Employing a qualitative approach and interpretive research paradigm, the study adopted an exploratory research design. The study employed the desk research method to investigate online jazz piano curriculum at higher education level. The desk study focused on the challenge of online learning and developed a conceptual framework for an online jazz piano teaching. The systematic literature review methodology together with document and content analysis was employed to provide an overview of online music teaching and learning and jazz piano pedagogy. This approach facilitated the development of a conceptual framework for online jazz piano teaching at a UoT.</p> <p>To gain insight into online jazz piano training, the study employed purposive sampling and identified and selected relevant empirical evidence. The identified purposive sample population consisted of documents (jazz piano method books, online jazz courses and academic publications on jazz piano pedagogy) that provided information on developing a conceptual framework for online jazz piano teaching at a UoT. The study combined content and thematic analysis to interpret and categorise the data into themes and determined the essential elements of current online jazz piano courses at the higher education level and how these elements can influence instructional design. Furthermore, data analysis informed the development of a conceptual model for developing online jazz piano music courses to suit the specific challenges of music students at a UoT.</p> <p>Through data analysis, the thematic musical elements were extracted and ranked within the top twenty-one. These top twenty-one musical themes provided a solid foundation for constructing a conceptual framework for online jazz piano music education suitable for both undergraduate and postgraduate degree programmes. Additionally, the top ten musical themes proved particularly relevant for higher-certificate music programmes.</p> <p>To address the specific challenges faced by the UoT students and ensure relevance in the South African context, the thematic musical elements were adapted. These adaptations focused on incorporating elements of South African jazz, including repertoire, style, and music performance practice.</p>	

The instructional design was carefully aligned with the adapted thematic musical elements, aiming to enhance learning by adjusting the learning method, student approach to learning and integrating online technology. Drawing on the TPACK (technological, pedagogy and content knowledge) model, the learning approach integrated technology-based music applications to enhance student learning.

The development of an online jazz piano conceptual framework tailored for a UoT and the South African context represents a significant milestone in advancing music education in the digital age. By drawing on the rich tapestry of South African jazz elements, including repertoire, style, and performance practices, the proposed conceptual framework addresses the specific challenges faced by music students at UoTs and embraces the cultural diversity inherent in the South African musical landscape.

In conclusion, through the integration of technology, guided by social constructivism and the TPACK model, the proposed framework for online jazz piano learning at a UoT has harnessed the power of synchronous and asynchronous learning methods, multimedia resources, and social media tools.

**Keywords**

jazz piano, music education, online music learning, online teaching, instructional design, online technology.



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## **Abbreviations**

ERT            Emergency remote teaching

NFSAS        National Student Financial Aid Scheme

UoT            University of Technology

USA            United States of America



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# 1 Introduction

## 1.1 Background and rationale

Higher education in South Africa has experienced a series of disruptions in the last five years. The #FeesMustFall and successive student protests during the 2016 to 2019 period severely impacted teaching and learning at tertiary institutions.

The decolonisation project addressed the Eurocentric curriculum and lack of transformation at universities. It required a re-think of traditional modes of teaching and learning, pedagogy, research focus areas, and assessment.

During 2020, the COVID-19 pandemic accelerated the pace of the digital transformation and affected a digital revolution at local and international universities (Mhlanga & Moloji 2020). However, lockdown protocols together with social distancing mandates compelled universities to transition to remote operations and implement emergency remote teaching methods (Bozkurt & Sharma 2020) to sustain their teaching and learning endeavours.

Although affluent South African universities could switch to online platforms, economically challenged universities encountered numerous obstacles in the shift from the traditional face-to-face contact teaching to online teaching platforms.

As a university of technology (UoT)<sup>1</sup> that caters for previously disadvantaged and underprivileged students, the music students' challenges hinge on a low socio-economic background and lack of infrastructure (Bridge 2015). Many students lack access to musical instruments, smartphones, laptops, and the internet. Most of the university's music students are funded by the National Student Financial Aid

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<sup>1</sup> Both traditional universities and universities of technology provide a spectrum of qualifications spanning from higher certificates to doctoral degrees. However, universities of technology stand out by emphasising technology innovation and transfer, offering career-focused educational programs in the technological realm (Bridge 2015). The primary objective of a university is to deliver practical and career-oriented programs and training.

Scheme (NFSAS), which provides tuition bursaries but includes limited funding for accommodation and books (NFSAS 2020).

Most music students have attended Quintile<sup>2</sup> 1 category schools in communities with low average household incomes, high unemployment rates, and low literacy rates. In addition, these particular schools are associated with poor-quality education (van Dyk & White 2019).

The practical-based subjects were severely impacted due to the face-to-face contact teaching approach. Extending the university semester and providing makeup lessons proved inadequate, as students had lost momentum in their learning. Students also faced financial challenges pertaining to registration, outstanding fee balances, transport costs, access to Wi-Fi, mobile technology, and accommodation.

University music students require access to digital resources to participate in online teaching and learning. These resources include music learning tools, technological infrastructure,<sup>3</sup> recording devices,<sup>4</sup> music instruments, and practice space (Gonsalves 2020; Naidoo 2020). However, financial constraints restrict students' access to the resources required for effective online learning. In addition, the students are forced to use mobile-technology-based apps, as the university lacks financial funding to assist with purchases of necessary online teaching and learning tools. Students require alternate electricity sources for powering electronic devices and internet technology to continue with online learning during electricity outages.

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<sup>2</sup> The quintile category indicates the socioeconomic status of a school by determining average household income, unemployment rates, and general literacy level in the school's geographical area. Quintile 1 to 3 represents poor schools and Quintile 4 to 5 are considered affluent schools (*Amended national norms and standards for school funding* 2017; Graven 2014; Hall & Giese 2008; Mestry & Ndhlovu 2014).

<sup>3</sup> Technological infrastructure – internet technology, high-end computers, MIDI keyboards, webcams, and headphones with built-in microphones, compatible software required to access zero-rated online learning platforms, and e-learning software.

<sup>4</sup> Recording devices – laptops, tablets, audio interfaces, microphones, high-resolution cameras, and recording software such as Logic Pro, Final Cut Pro.

An emergency online jazz piano teaching and learning strategy was developed in response to curriculum, programme delivery methods, learning styles, and assessment methods. Learning preferences, teaching techniques, assessment methods, online platform preferences, infrastructural availability, and stakeholders' challenges were considered. The online jazz piano teaching and learning strategy was flexible and relevant to address these challenges unique to the student profile. Based on the emergency online jazz piano teaching and learning strategy, this study investigates which essential elements influence instructional design and facilitation and how these elements inform a conceptual model for developing online jazz piano music courses at the higher education level.

## **1.2 Problem statement**

Music education is constantly changing with the inclusion of the internet and mobile technology (Wei & Young 2011). This change was fast-tracked with the COVID-19 pandemic, and music educators were confronted with finding ways to switch from analogue (traditional) teaching to incorporating technology-based teaching practices. However, the unpreparedness of music educators led to the use of the traditional jazz piano teaching model, which was unsuitable in an online music-learning environment. Key jazz piano skills could not be taught or assessed because online music learning environments did not suit the specific needs and challenges of music students. Traditional pedagogical approaches must be adjusted to be effective in the technological surge or to switch to online teaching.

Although various online music teaching resources existed, these resources did not address the specific needs for acquiring jazz piano skills and the challenges of the music student. An effective online jazz piano teaching method was unavailable to suit the music students' unique challenges. The development of an online jazz piano programme should be flexible and relevant to address these challenges unique to the music student profile. The music students' learning preferences, instructional methods, assessment approaches, platform preferences for online learning, infrastructural availability and specific challenges requires consideration and understanding.

Considering the specific challenges faced by the music students, the online jazz piano course should consider:

What are the essential elements that influence instructional design and facilitation and how do these elements inform a pedagogical framework for developing online jazz piano music courses at the higher education level?

### **1.3 Aim of the study**

While research enquiries into the utilisation of technology in education is constantly advancing and developing, online music training has been inadequately investigated (Koutsoupido 2015).

This study seeks to determine the essential elements of the current online jazz piano curriculum at the higher education level. The study examines identifiable elements that influence the instructional design and facilitation of online jazz piano learning in music programmes at the higher education level using systematic literature analysis.

The enquiry focused on the elements that inform a conceptual framework for developing online jazz piano music courses at the higher education level. Various online teaching and learning platforms were explored for effectiveness and accessibility to broaden the scope of technology used in online jazz piano lessons.

Harnessing the influence of various internet platforms and resources improves the quality of music learning and teaching approaches (Lv & Luo 2021). Integrating technology with education improves the quality of music teaching and learning by promoting continuous learning and practice (Webster 2012; Nart 2016). This study provides an interface of how students participate with a digital platform system, which informs the instructional design and facilitation and enables the development of a conceptual framework for developing online jazz piano music courses for the higher education level.

### **1.4 Research questions**

The following questions address the aim and objectives of the study:

Q1 What are the essential musical elements of the current jazz piano curriculum at the higher education level?

Q2 What thematic musical elements are important for instructional design and facilitation in online jazz piano courses at the higher education level?

Q3 How do these thematic elements inform a conceptual framework for developing online jazz piano music courses to suit the specific challenges of the UoT music students?

Table 1 presents the research questions, theoretical framework, research methods and results (chapter).

**Table 1: Overlay matrix.**

Investigative question	Theoretical framework	Research methods	Results (chapter)
Q1. What are the essential musical elements of the current jazz piano curriculum at the higher education level?	Social constructivist approach 2.16 Jazz piano pedagogy 2.16.1 Method Books 2.16.2 Academic research 2.17 Online jazz piano degrees and courses	Qualitative case study. Interpretative research. Systematic literature review. Document and content analysis.	4.2 Table 3. Essential elements of the current Jazz piano curriculum Table 4. Themes and number of elements Table 5. Themes and data points Figure 2. Themes and number of elements Figure 3. Themes and data points
Q2. What thematic musical elements are important for instructional design and facilitation in online jazz piano courses at the higher education level?	2.16.1 Method Books 2.16.2 Academic research 2.17 Online jazz piano degrees and courses	Qualitative case study. Interpretative research. Systematic literature review. Document and content analysis.	4.3 Table 6 Thematic musical elements important for instructional design and facilitation in online jazz piano courses. Table 7 Overall ranking of thematic musical elements important for instructional design and facilitation in online jazz piano courses. Figure 4. Representation of thematic musical elements important for instructional

			design and facilitation in online jazz piano courses. Figure 5. Overall ranking of thematic musical elements important for instructional design and facilitation in online jazz piano courses.
Q3. How do these thematic elements inform a conceptual framework for developing online jazz piano music courses to suit the specific challenges of the UoT music students?	<p>2.4 Online learning and online courses</p> <p>2.5 Blended learning</p> <p>2.6 Self-regulated learning</p> <p>2.7 Student-centered learning</p> <p>2.8 E-portfolio and assessment strategy</p> <p>2.9 Online music pedagogy</p> <p>2.10 Online music-teaching tools</p> <p>2.11 Integrating technology in online music teaching and learning</p> <p>2.12 Multimedia in music teaching and learning</p> <p>2.13 Social media in music teaching and learning</p> <p>2.14 Online music learning process and design</p> <p>2.15 Online music assessment</p>	<p>Qualitative case study.</p> <p>Interpretative research.</p> <p>Systematic literature review.</p> <p>Document and content analysis.</p>	<p>4.4 Table 8 Top 21 thematic musical elements important for instructional design and facilitation in online jazz piano courses. Table 9 Top 10 thematic musical elements important for instructional design and facilitation in online jazz piano courses. Figure 6. Top 21 thematic elements important for instructional design and facilitation in online jazz piano courses Figure 7. Top 10 thematic elements important for instructional design and facilitation in online jazz piano courses.</p> <p>4.5 UoT music student demographics.</p> <p>4.6 Adapting the thematic musical elements to inform a conceptual framework for developing online jazz piano music courses to suit the</p>



			<p>specific challenges of the UoT students.</p> <p>Table 10 Adapting the thematic musical elements to inform a conceptual framework for developing online jazz piano music courses to suit the specific challenges of the UoT music students.</p> <p>4.7 The Instructional design</p> <p>Figure 8. Conceptual framework for online jazz piano teaching</p> <p>4.9 Online technology environment</p>
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#### 1.4.1 Objectives of the study

The online learning music environment has been inadequately investigated. This study was conducted to fill this gap by investigating online jazz piano teaching and learning approaches to determine their limitations, efficacy, alignment with the teacher, student expectations, and learning outcomes. This study was not conducted in South African music institutions. The data collected through a systematic literature review informs instructional design to develop a conceptual framework for an online music course to suit the specific challenges of UoT music students.

Through the qualitative case study approach, the following objectives were explored:

- Q1 Identify the essential elements of current online jazz piano curriculum at the higher education level?
- Q2 Identify the thematic elements influence instructional design and facilitation in online jazz piano courses at the higher education level?
- Q3 Develop a conceptual framework for online jazz piano music courses to suit the specific challenges of music students at the UoT.

### **1.4.2 Chapter outline**

Chapter 1 introduces the research topic by providing background information. It outlines the problem statement, identifying the specific issue and gap in knowledge that the research aims to address. Additionally, the chapter presents the aims and objectives of the study, detailing what the research hopes to achieve in the investigation. Research questions are formulated to guide the study, laying out the specific inquiries that the research aims to answer.

Chapter 2 offers a comprehensive overview of the existing literature pertinent to the research focus. It synthesises previous studies, theories, and findings related to the topic under investigation. This chapter highlights the current state of knowledge in the field, identifies key themes, gaps in the literature, and discusses various theoretical frameworks that inform the research. By reviewing the existing literature, a foundation for the subsequent analysis and interpretation of the research findings will be provided.

Chapter 3 outlines the research design and methodology for data collection and analysis are outlined. This section delineates the desktop study and elaborates on the data collection procedures, sampling techniques and data analysis strategy employed to gather data relevant to the research questions and objectives. It describes the research design and justifies the chosen approach ensuring transparency and rigor in the research process.

Chapter 4 provides data analysis and the discussion of findings. The data analysis focuses on identifying patterns, themes and relationships within the data. The chapter presents the results of the analysis in a clear and organised manner using tables, graphs and thematic summaries. The findings are critically discussed, interpreted and contextualised within the existing literature reviewed in Chapter 2. This discussion aims to elucidate the significance of the findings, address research questions, and contribute new insights to the field.

Chapter 5 concludes the study by summarising the key findings and their implications. It revisits the research objectives and demonstrates how they have been addressed through the data analysis conducted in Chapter 4. The chapter discusses the significance of the findings in relation to the broader research context and offers insights into their practical implications. Furthermore, Chapter

5 outlines recommendations for further research based on the limitations identified during the study and aspects for future research suggested by the findings.

### **1.4.3 Definition of key terms**

Aural transcription – is the process of notating a recorded excerpt of music.

Aural training – refers to the learning process of aurally recognising and replicating melodies, harmonies, and rhythms (Trapp 2020,11).

Audiation – is the process of mentally hearing and comprehending music. Audiation involves the internalisation and understanding of melody, harmony, rhythm, and other musical elements to enhance overall musicality.

Chord changes – is jazz terminology that refers to the chord progression. Jazz improvisers use the chord changes as a template for improvisation (Trapp 2020, 11)

Harmonic accompaniment (comping) – refers to the rhythmic playing of jazz voicings as accompaniment (Trapp 2020,11).

Improvisation (solo) – is an important component in jazz and involves the spontaneous composition of solo melodies or rhythmic accompaniment.

Lead sheet – is a type of musical score that contains all the musical information necessary to learn a tune. A lead sheet includes the original melody, usually embellished by the jazz musician, and chord symbols to guide the improvisation (Trapp 2020, 11)

Rhythm – encompasses the diverse sound patterns that define various jazz styles.

Technique – refers to the physical aspect, specific skills and proficiency a musician employs while playing a musical instrument.

Theory – refers to the field of study that deals with the framework for understanding the elements of music and how they relate to music composition. The key components of music theory include scales, chords, harmony, rhythm, melody, and form.

Stylistic characteristics (style) – refer to the distinctive features that define a particular music style.

## **2 Literature review**

Online music-learning literature reviewed for this study highlighted forms of online learning in the global and South African context. Various themes were explored while investigating the main elements that informed a conceptual framework for online jazz piano lessons that addressed music students' specific challenges: university digitalisation, various online-learning approaches, jazz pedagogy and various online music learning and assessment approaches pertaining to instrumental music teaching.

### **2.1 Emergency remote teaching**

In response to the educational crisis, online emergency remote teaching (ERT) was implemented (Bozkurt & Sharma, 2020). The primary purpose of ERT is to provide temporary access to teaching and learning quickly and reliably during a crisis. ERT uses remote teaching solutions and alternate instructional modes (Golden, 2020) for education as a substitute for face-to-face or blended learning. As noted by Hodges et al. (2020), ERT has prompted educators to innovate and adapt teaching methods to digital environments, fostering new pedagogical approaches and technologies. While ERT presents challenges, including equity issues and technological barriers, it has also sparked discussions and reflections on the future of education (Hodges et al., 2020).

### **2.2 South African higher education online teaching and learning context**

South African higher education institutions were forced to switch from face-to-face classes to remote learning during the lockdown to curb the spread of the COVID-19 virus (Mhlanga & Moloji 2020). Several affluent universities switched to remote online learning, using their pre-existing online platforms. Other universities and public schools had to shut down during the lockdown as they lacked 4IR technological infrastructure (Mhlanga & Moloji 2020). Although remote learning provided flexibility for teaching and learning, the swift implementation of remote online teaching depended on funding, technology, connectivity, and accessibility.

Available funding to support online learning varies between higher education institutions, leading to disparities between online teaching and learning models. Online teaching and learning models were thus based on institutional financial support, students' financial backgrounds, and accessibility of internet technology

(Mhlanga & Moloji 2020). Websites, Microsoft Teams, Skype, WhatsApp groups, and Zoom were the most popular internet tools for providing and facilitating remote learning (Mhlanga & Moloji 2020).

### 2.3 Online learning and online courses

Online learning encompasses various forms of web-based, e-learning, virtual, and internet-based educational approaches (Keengwe & Kidd 2010, Moses 2023). It integrates a diverse range of technological tools and platforms, shaping learner experiences, learning management systems, educational theories, and pedagogical practices in higher education (Hansen & Imse 2016; Ibrahim & Nat 2019; Keengwe & Kidd 2010, Moses 2023). The delivery method and structure of content are pivotal factors in enhancing the effectiveness of online learning experiences.

Table 2 provides a brief outline of online learning, asynchronous learning, synchronous learning, and online courses (Barker, 2003; Browne, 2005; Hansen & Imse, 2016; Hrastinski, 2008; Milakovich & Wise, 2019; Moses 2023; Schlesselmann, 2020; Thalheimer, 2017).

**Table 2: Outline of online learning, synchronous, asynchronous, and online courses.**

Online learning	<ul style="list-style-type: none"> <li>• Dynamic environments boast diverse pedagogical practices, including active learning and incorporating student-centred didactic approaches and techniques (Barker 2003; Browne 2005)</li> <li>• Alternative to traditional classroom teaching methods and settings</li> <li>• Flexible appeals to various types of learning styles – visual, auditory, and practical (Hansen &amp; Imse 2016)</li> </ul>
Asynchronous learning	<ul style="list-style-type: none"> <li>• Students are online when required</li> <li>• Students control learning pace – increases students' ability to process information and provide content-related responses (Milakovich &amp; Wise 2019)</li> <li>• Encourages cognitive participation – increased reflection and capacity to process information</li> </ul>
Synchronous learning	<ul style="list-style-type: none"> <li>• One-on-one and uses digital platforms to access online course content/media at the same time (Milakovich &amp; Wise 2019)</li> <li>• Increased psychological arousal, motivation, and convergence on meaning (Hrastinski 2008)</li> </ul>
Online courses	<ul style="list-style-type: none"> <li>• Engaging and interactive</li> <li>• Increased interaction with the lecturer, students, and course material</li> </ul>

	<ul style="list-style-type: none"> <li>• Collaborative and flexible assessment methods (Schlesselmann 2020)</li> <li>• Teaching method takes precedence over the teaching modality</li> <li>• Learning experience yields better results than face-to-face teaching (Thalheimer 2017)</li> </ul>
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## **2.4 Blended learning**

Blended learning combines face-to-face learning and web-based experiences (Ibrahim & Nat 2019). Various teaching and learning environments are integrated, including asynchronous learning networks, web-based teaching platforms, and online learning tools. The challenges of this approach are limited access to technology and inadequate computer skills (Tshabala et al., 2014).

## **2.5 Self-regulated learning**

Self-regulated learning is crucial to music practice. Achievement levels and success are based on practice, time, and commitment. Practice methods involve self-assessment and correction, leading to deliberate practice (Hallum & Bautista 2012), active student engagements (Pike & Shoemaker 2015), and student-controlled learning processes. Motivation is essential in self-regulation intervention programmes that improve academic performance (Dignath et al., 2008).

## **2.6 Student-centred learning**

Student-centred or active learning engages students with the subject content and encourages them to control their learning. The teaching-and-learning and assessment strategies were adapted to suit the needs and abilities of the students (Brown 2008). The skills required for the future success of music students are cultivated through peer evaluation, self-reflection, and problem-solving. These activities form part of students' music-making (Hansen & Imse 2016). A student-centred learning approach encourages lifelong learning and nurtures creativity and collaboration (Scott 2011).

## **2.7 E-portfolio and assessment strategy**

An electronic portfolio (e-portfolio) is a digital collection of content. An e-portfolio manages data and can be adapted to support learning (Abrami & Barrett 2005). E-portfolios are used to recognise various learning styles of students and enhance

their learning through self-reflection and self-regulated learning (Boulton 2014; Yastibas & Yastibas 2015).

Higher education institutions use e-portfolios as alternative assessment strategies (Van Wyk 2017) since they allow for assessment flexibility. E-portfolios also serve as a record of evidence indicating knowledge and skills (Van Wyk 2017), which in turn serves as an entrepreneurial tool (Mapundu & Musara 2019). Ongoing feedback (diagnostic) and continuous monitoring of tasks are assessed according to specific evaluation criteria (Van Wyk 2017).

## **2.8 Online music pedagogy**

Literature pertaining to online music pedagogy is limited and suggests further exploration into online music learning (Johnson 2017). A comprehensive online music teaching pedagogy is yet to be established (Adileh 2012; Bowman 2014).

Although online music pedagogy has been the subject of significant debate, the area of practical performance has received limited coverage (Horspool & Yang 2010). In the contemporary landscape of music education at the post-secondary level, there is a perception that traditional methods are becoming obsolete. The model of tertiary music education continues to adhere to a conservatory-style approach primarily designed for classical musicians (Kratus 2007; McGrath & Blackburn 2014). To remain relevant and adaptable in this evolving musical environment, tertiary music education should prioritise exploring digital musical realms (Cremata 2021).

Online music pedagogy, which involves the use of digital technologies and online platforms for teaching and learning music, is an emerging discipline gaining momentum (McConville & Murphy 2017; McGrath & Blackburn 2014). More educational efforts are needed to implement distance learning strategies that support music education (Thiyagarajan & Sarala 2022).

Traditionally, music skills, including performance, have been taught in face-to-face settings. [...] Educators face the challenge of replicating the same high-quality learning experience in an online environment (McGrath & Blackburn 2014, 224).

When music education transitions to an online setting, it significantly impacts the processes, experiences, methods and interactions (Peters 2017). Over time, music educators and students have developed ingrained routines and habits,

which Regelski (2013) describes as the default approach in music education. These practices have become deeply embedded in the pedagogical approach, forming repetitive patterns that educators and students follow without critical examination. Huberman and Miles (1984) refer to this phenomenon as engrooved practices.

Online music learning can be categorised into two groups: the first involves the chronological study of frameworks for integrating technology into distance learning, and the second entails the investigation of pedagogical approaches for online music courses (Johnson 2017).

The advancement of information technology has brought online music education into the mainstream of educational methods (Yan 2022). The COVID-19 pandemic underscored the need to enhance the quality of online music education (Yan 2022). Lierse (2015) suggests a four-stage participatory action research methodological approach to developing online music education courses. This approach involves initial planning, monitoring the processes and consequences, reflecting on the processes and consequences and subsequently revising plans to initiate the cycle anew. Johnson (2017) suggests that social constructivism is an essential component for creating a conducive online learning environment. Johnson's (2017) proposed framework for online music learning underscores the importance of design, communication, and assessment as fundamental elements in developing and implementing online music courses to enrich students' learning experiences.

Online music pedagogy presents numerous challenges and considerations that require attention to ensure effective teaching and learning experiences. Remote pedagogy is seen as a supplementary tool to traditional teaching methods (Cayari 2018). Integrating technological tools into both synchronous and asynchronous learning environments holds significant potential for improving music education (Lui & Shao 2022). The integration of online music technology in both real-time and self-regulated learning settings holds great promise for advancing the field of music education (Cayari 2018).

The flexibility of location in online music pedagogy surpasses geographical boundaries and facilitates the exchange of ideas and practices of various cultures (Biasutti 2015a; Johnson et., al 2012). Online music pedagogy is an inclusive form of music instruction that offers opportunities for a wide range of prospective



students and broader learnerships, as well as embraces all music genres (Williams 2007). Its multimodal nature incorporates a variety of multimedia platforms to suit students' learning styles, offers creative opportunities for the acquisition of musical knowledge and skills (King 2016), incorporates technology (King & Himondes 2016) and enhances collaborative dialogue and promotes pedagogical content and knowledge (Aidleh 2012; Draper 2008, Dye 2007).

Despite the availability of technological music learning tools, educators might not be incorporating technology into their teaching practices (Harasim 2017). Several factors contribute to the partial adoption of technology into teaching practices, one of which is a predominant emphasis on technology development in professional development rather than the pedagogical expertise required for the effective adoption of technology into online teaching (Macdonald & Poniatowska 2011).

## **2.9 Online music-teaching tools**

Online music-teaching tools are an invaluable resource required for online learning. A selection of online music-teaching tools is based on availability, functionality, teaching efficacy, and integration with existing music software (Brook & Upitis 2015). Self-regulation, self-learning, and student-driven learning are key learning approaches in online learning programmes (Brook & Upitis 2015).

Internet MIDI and method books form part of synchronous teaching approaches and create opportunities shaped by the online medium (Dammers 2009) to provide a meaningful learning experience (Shoemaker & van Stam 2010). Furthermore, synchronous teaching is facilitated using popular apps like Zoom, Google Meet, Google Hangouts, Skype, and FaceTime (Martinez 2021; Lisboa et al., 2020). There are several benefits associated with these networking technologies, including international performative collaboration, masterclasses, remote rehearsals, time flexibility, reduced travel and the associated costs (Lisboa et al., 2020). Although synchronous online teaching approaches provide piano lessons to disadvantaged populations in remote areas, Skype videoconferencing was functional but not equivalent to face-to-face instruction (Dammers 2009). In addition, videoconferencing-based teaching is more intense, but the delay hinders students and teachers from performing together (Sture Brändström 2012). Other teaching challenges include complications related to a lack of knowledge of equipment and technology (Kruse et al., 2013), quality of videoconferencing equipment (Lancaster 2007), latency dependent on internet bandwidth (Riley et

al., 2016) and adapting the teaching and learning approach and process (Lisboa et al., 2020). A comparative investigation conducted by King et al. (2019) examined the technical challenges and instructional aspects of online instrumental music lessons versus face-to-face lessons in distant rural communities. The study highlighted issues related to audio-visual quality and connectivity as significant technical challenges. Steven et al. (2019) investigated the technical and pedagogical concerns of videoconferencing related to online instrumental and vocal teaching in isolated areas of Australia. The research findings from the laboratory-and-field-based analyses identified potential hardware and software delivery systems and pedagogical changes to enhance online instrumental learning.

Professional web platforms play a significant role in online music education. The extensive adoption of massive open online courses (MOOCs) offers a vast array of distributed online resources and well-designed learning pathways (Lee 2021). This open online course broadens the educational materials provided by renowned pedagogues, enabling most students to access and exchange knowledge resources. MOOCs contribute to the accessibility and sustainability of lifelong education by making it attainable and convenient (Wang 2020).

## **2.10 Integrating technology in online music teaching and learning**

New technologies offer opportunities to create learning environments that suit the specific needs of students (Ventura 2021). Introducing new technologies to music education supports students' learning experiences (Purves 2012; Webster 2007). Integrating internet technology into music pedagogy necessitates an understanding of their potential together with the intersection of digital, musical, and social constructs (Waldron et al., 2020). Internet technology and online music education tools provide access to twenty-first-century classrooms. Creative online teaching methods encourage student engagement and interaction.

Technology-based music applications aid in supporting and facilitating music instrument learning. Music technology examples include interactive music software, which encourages creative activities (Johnson 2017), networked learning, the use of multimedia, incorporating music technology into the curriculum, and benchmarking national standards (Ng et al., 2013).

Online music education tools are widely available due to the broad integration of internet technology into music pedagogy. Online music learning engages students with creative and interactive music activities. Various internet music-teaching tools cater to students' differing learning methods. Using internet technology in music teaching increases students' motivation and engagement by providing access to additional music training resources and software. In addition, teaching methods can be streamlined to suit the students' learning styles. Subsequently, using technology effectively in music lessons promotes self-learning and self-efficacy (Dorfman 2013).

Nart (2016) explains that the role of the music educator in the twenty-first century has shifted from being the source to guiding students to access and manage information. The study outlines the various related computer-based music education and music software categories used in online music teaching and learning. These include tutorial software, drill and practice software, game software (gamification), notation software, sequencing and recording software. The software for music education provides opportunities for students and teachers to perform various repertoire at different levels.

### **2.11 Multimedia in music teaching and learning**

The landscape of music education is continually shaped by emerging forms of innovative media, providing students and music educators with an expanded array of options (Johnson 2017; McGrath & Blackburn 2014). Integrating new media with existing conventional forms opens avenues for the advancement of online music education. As students acclimate to online music education, active engagement with new media presents the prospect of enhancing the learning process and accommodating diverse learning approaches (Salazar 2010).

A substantial amount of jazz instruction is readily accessible online through various internet platforms (Danylets 2019). Video lessons and online workshops are dedicated to both instruction and self-reflection. Digital music devices, tablet computing, and smart phone technology influence the impact of media on music education. The influence of media on music education has transformed the classroom environment, enabling learning to extend beyond the physical confines of the classroom and fostering collaboration mediated by computers (Thibeault 2012; Jenkins 2006). The proliferation of online social media music networks, the sharing of original music compositions, virtual learning environments and the

emergence of online graduate music programmes underscore the influence of online music communities on music education (Thibeault 2012). In addition, participatory culture practices on various social media sites and personal websites allow musicians to expand their audience and shared networks through digital performance (Ruthmann & Hebert 2012; Waldron 2012; Cayari 2015). Furthermore, fostering participatory culture practices in music education encourages students to create and generate digital musical performances for sharing and publishing on the internet (Tobias 2013).

User-generated content (UGC) refers to digital content and media generated by individuals in their personal capacity for sharing with the wider public on the internet (Burgess & Green 2009). The use of YouTube videos within online participatory culture holds significant implications for music education, impacting online and offline teaching and learning environments (Waldon 2013). The initial uncertainty among music educators about the value of YouTube in music education, akin to the ambiguity surrounding YouTube's identity noted by new media researchers, has evolved into considerations of its potential epistemological significance in music education. This evaluation is done within the framework of user-generated content, social interaction, participatory culture, and student autonomy within online communities (Cayari 2011; Waldron 2011a; 2011b; Waldron & Bayley 2012).

Moreover, video-sharing sites serve as cyberspaces that facilitate experiencing, creating, and learning music in communities (Waldron 2009). Tobias (2013) contends that incorporating adolescents' popular internet practices can assist music educators in bridging the gap between classrooms and contemporary culture. He encourages educators to impart the skills employed by online adolescent peers to empower students to pursue music beyond the classroom setting.

## **2.12 Social media in music teaching and learning**

Incorporating social media into music teaching and learning can enhance the overall learning experience for students (Albert 2015). Social media platforms can be viewed as virtual communities of practice grounded in constructivist principles that involve processes of acquiring and creating knowledge through exploration, experience, social involvement and interaction. Virtual communities support educational activities by offering a less time-consuming alternative to traditional

face-to-face teaching approaches. Furthermore, situated learning takes place when people who share common interests and goals (learning community) actively engage in peer learning (Wenger 1998). This form of participatory learning aligns with Vygotsky's social constructivist theory (SCT), which recognises students' active role in shaping and engaging in their peers' learning (Vygotsky 1978). Social media serves as an ideal environment for cultivating a community of practice, a learning community where members collaboratively create knowledge and share experiences sustaining this interaction across various social media platforms (Wenger, McDermott & Snyder 2002).

Utilising social media in music teaching and within the classroom is a powerful tool for pedagogical change in music pedagogy by broadening the scope of educational activities (Salavuo 2008). Incorporating social media into the music classroom presents numerous opportunities, including enhanced engagement, greater relevance and enhanced instructional effectiveness (Giebelhausen 2015).

Music pedagogues and social media experts have investigated the use of various social media platforms and websites for creating personal learning networks (Giebelhausen 2015; Bauer 2020; Bauer 2010) and producing podcasts (Bolden 2013; Dorfman 2013). Widely used social media platforms include Facebook, YouTube, Twitter, Wikipedia, Google Docs, Wikis, and blogs (Albert 2015). Social networks, particularly the most well-known and popular forms of social media such as Facebook, connect individuals with shared interests and are well-suited for diverse music classes, fostering peer learning, and facilitating group discussions. Utilising social networks (Facebook Groups and Google classroom) can establish online communities of practice that bolster student learning in both their classes and ensembles.

Blogs (weblogs) are personalised platforms that focus on the individual commentary of a person, incorporating links to various resource information such as audio and video files, images and websites. The blog content and discussion topics are derived from the shared interests of a community of students that are aligned with specific collaborative learning goals (Godwin-Jones 2003; Richardson 2010). Music educators can use blogs to share viewpoints and encourage student interaction and collaboration with others to engage in topics of mutual interest (Albert 2015).

### **2.13 Online music learning process and design**

The expansion of technology in music education has led to the surge of online music resources and transformed the music learning process. However, few investigations have been implemented into how these technologies improve students' learning processes (Ventura 2021). Although students have access to online learning material that incorporates educational frameworks, the learning material (videos) are limited to knowledge transfer, like the traditional transmissive teaching approach. Ventura's (2021) case study interrogated and analysed the use of ICT in learning music theory. The study sought to improve the effectiveness of the teaching processes and activities by stimulating the cognitive processes, thus promoting the acquisition of operational and analytical skills. As a result, students overcame learning difficulties relating to processing and structuring knowledge and information.

The learning environment includes physical spaces and virtual platforms (Ventura 2021). The organisation of the learning spaces needs to be functional, enjoyable, and friendly. Achieving this means catering for the cultural, methodological, cultural premises and learning objectives. In addition, the learning preferences, pre-existing skills, problem-solving preferences and emotional components of the learning process should be considered. Selecting appropriate hardware and software tools promotes student motivation and inclusivity. The learning environment designed according to students' needs increases performance, motivation and expectations (Ventura 2021).

Most online music education closely mirrors the traditional model, with the music curriculum being replicated within a virtual environment (Cremata 2021). The switch from face-to-face music teaching to online music teaching requires a focused approach (Johnson 2020). Online music teaching frameworks are limited. Using a constructivist approach, Johnson (2020) proposes an online teaching model to address the limitations of using elements from various education fields, such as technology used in education and music education. Teaching approaches, learning methods, online technological landscape, student competencies and knowledge are crucial components that provide the basis for the proposed framework. In addition, combining pedagogical knowledge with technology, such as the TPACK model (technology, pedagogy and content knowledge) proposed by Mishra and Koehler (2006), can assist pedagogues in aligning curriculum with subject matter and technology.

A well-designed online learning environment involves providing students with uninterrupted access to learning material and resource tools (O'Callaghan et al., 2017), flexible learning schedules, regulated learning, accessibility needs (Henderson et al., 2017), educational material in various formats (Meyer et al., 2014) and opportunity for creating a collaborative learning atmosphere (Harasim 2017). Implementing a collaborative learning design within an online setting supports student learning (Ito et al., 2013). Lock and Johnson (2015) highlight online learning collaborative environments that encompass three interactive learning modes: student-to-student, student-to-content, and student-to-instructor interactions (Johnson 2017). Together, these interactions offer students a multifaceted approach to learning that is embedded in principles of the social constructivist theory of learning.

#### **2.14 Online music assessment**

The online music assessment model depends on the assigned tasks and focuses on the learning outcome of students and knowledge (Johnson 2020). Biasutti et al.'s (2022) study assessed music teachers' perspectives, as well as learning strategies and objectives, when remotely giving music lessons designed according to students' needs and limitations regarding music instrument online teaching. Pedagogical approaches were cognisant of the time constraints on online lessons, decreased levels of non-verbal communication and reduced interaction compared to traditional face-to-face instrumental teaching. The differing teaching contexts meant that it was problematic to maintain the same assessment criteria. The students' expressivity, interpretations, tone qualities and physical postures were difficult to evaluate. Johnson (2020) suggests that online music assessments can be informal or formal and still link to music learning. Informal refers to expert lesson feedback, self-reflection, or peer comments. In contrast, the formal setting will include a recital grade, performance jury or examination panel. Technology tools, applications, and learning management systems provide additional formal and informal assessment platforms (Johnson 2020).

#### **2.15 Jazz piano pedagogy**

Extensive coverage of jazz piano pedagogy is found in method books, academic research and multimedia sources with literature categorising various aspects of this field. Additional categories and resources not directly aligned with the primary

focus of this research are also acknowledged for their essential contributions to gaining significant insight, as noted by Herzig (1997). These resources provide in-depth knowledge of the formative experiences of jazz musicians (Lin 2011; Berliner 1994) and delve into the musicological and ethnographical aspects of jazz piano.

### **2.15.1 Method books**

Before 1985, early jazz pedagogy material consisted of books on jazz improvisation, jazz exercises, and jazz theory books (Witmer and Robins 1988). These instructional resources primarily concentrated on applying the elements of jazz style and were limited to practice methods.

An important resource for jazz piano pedagogy involves the combination of *The Jazz Piano Book* (1989) and *The Jazz Theory Book* (1995) authored by distinguished jazz educator and pianist Mark Levine. Widely regarded as the foremost and comprehensive resource for jazz study methods, according to Danylets (2019) and Herzig (1997), Levine advocates that the most effective way to grasp jazz is through listening to jazz recordings and playing by ear. His books encompass a wide array of elements within jazz piano pedagogy that span intervals, scale theory, chord voicings, chord substitutions, transcriptions, jazz style, comping, technique, practice techniques, recommended listening, and detailed repertoire lists tailored for each chapter.

In the *Jazz Piano Handbook*, Michele Weir (2007) emphasises the systematic development of jazz piano skills for both jazz vocalists and instrumentalists. She takes a step-by-step approach addressing elements such as technique, chord voicings, chord progressions (jazz harmony, broken chords), rhythmic styles, harmonising the melody and the practical application of these concepts to prescribed jazz standards. She provides students with a demonstration CD that serves as a listening model for the exercise and etudes. The learning strategies focus on the application of text, aural transcription and hands-on playing.

In the *Berklee Jazz Piano Book*, Ray Santisi (2009) explores the jazz piano curriculum of Berklee College of Music, blending theoretical knowledge with the practical application of jazz piano concepts. He delves into various topics, including jazz chords, voicings, voice leading, modes and scales, comping, syncopation, rhythmic displacement, bass lines, harmonising melodies, modal



melody and harmony, creating melodies for harmony, improvisation, practice techniques, lead sheets and advanced chord voicings applied to the prescribed repertoire. Demonstrations of accompaniment supplement a guided practice section at the end of each chapter and practice audio concepts. These are available through online streaming and download, featuring a versatile multifunction audio player.

In *Intro to Jazz Piano*, accomplished jazz pianist and music educator Mark Harrison (2011) offers intermediate-level instruction to develop jazz piano techniques for performing jazz standards. The method book introduces concepts such as voicings, chord patterns, advanced voicings, comping, rhythmic accompaniment patterns, harmonising a jazz melody, improvisation, jazz blues, and applying these concepts to repertoire.

In *Contemporary Jazz Piano – The Complete Guide with Online Audio*, Harrison (2010) delves deeply into the understanding of scales, chords, harmony, voicings concepts, jazz comping styles, rhythmic concepts, jazz styles and contemporary jazz improvisation techniques inspired by iconic jazz pianists. These concepts are then applied to selected jazz repertoire.

Both Harrison's (2010; 2011) books feature demonstration audio tracks accessible through online streaming or downloads. The multifunctional audio player (PLAYBACK+) provided by the publisher enables adjustment to tempo, pitch keys, audio panning, and setting loop points. The book is also available in digital format.

In the second edition of *Solo Jazz Piano – the linear approach*, Neil Olmstead (2013) employs a methodical approach to teach jazz piano techniques inspired by iconic jazz pianists. The book is structured into three sections – chords, bass lines and multiple voice improvisation – comprising 21 lessons that cover chord theory, chord extensions, chord voicings, scales, piano technique, practice exercises, bass lines, jazz repertoire, multiple voice improvisation, improvisational techniques (stylistic, motivic, modulation), and transcriptions. Enhancing the learning experience, an accompanying CD provides listening examples and online audio tracks that include a multifunctional audio player, allowing users to alter pitch and create practice loops.

In the *Hal Leonard Jazz Piano Method Book 1*, Mark Davis (2015) caters to jazz piano lessons for students at all levels. The comprehensive method book

addresses a wide range of topics, including theory, chords, chord voicings, improvisation, structure, forms, scales, modes, rhythm, repertoire (lead sheet interpretation, jazz standards), harmony, aural development, jazz styles, and transcription. Davis (2015) includes practice tips, recommended listening, advanced chords, jazz blues, and rhythm changes.

Building upon the foundation laid in the first book, in the *Hal Leonard Jazz Piano Method Book 2*, Davis (2019) provides a more in-depth and advanced exploration of the concepts introduced in Book 1. The piano instruction books are accessible in various digital formats such as Kindle and Apple Books, with the added benefit of access to online audio tracks through streaming or download using a multifunction audio player.

In *Introduction to Jazz Piano – A Deep Dive*, Jeb Patton (2020) equips students with the essential skills necessary for proficiency in jazz piano performance. The course encompasses a broad spectrum of topics, including phrasing, jazz harmony, scales, chord voicings, advanced chord voicings, comping in different positions, practice methods, technical exercises, developing melodic improvisation, transcription and the blues. An accompanying CD features demonstrations of exercises and play-along tracks.

In *Modern Jazz Piano Revealed! An Intermediate Guide to Jazz Concepts, Improvisation, Techniques, and Theory*, accomplished and highly rated jazz pianist Sarah Cion (2020) presents the building blocks and fundamentals as a process of discovery. Her vast teaching experience helped develop a detailed course featuring fundamental elements for learning jazz piano. These include key scales, intervals, triads, chord scales, inversions, arpeggiation, rhythm, the ii-v-I progression, alterations and tensions, upper structure triads, diminished scales and chords, drop two voicings, harmonising a melody, approach notes, walking a bassline, comping, the blues, rhythm changes, soloing and “puttin’ it all together” in the application of these concepts in the repertoire. An accompanying audio CD provides listening examples of the transcriptions.

In *Exploring Jazz Piano Volume 1: Harmony/Technique/Improvisation*, Tim Richards (2020a) offers a comprehensive jazz piano syllabus tailored for intermediate pianists. It introduces fundamental concepts such as basic chord voicings, chord/scale relationships, harmony, scales, patterns, rhythms, harmonic chord progressions, horizontal and vertical improvisation, advanced chord

voicings, ii-v-I chord progressions, drop two voicings, comping, technical exercises, accompaniment styles, ear training and the blues. The book incorporates well-known jazz standards for repertoire studies and includes transcribed solos from iconic jazz pianists. In the second volume of *Exploring Jazz Piano*, Richards (2020b) delves into advanced concepts, including intricate chord progressions and harmony, scales and modes, complex accompaniment and improvisation techniques based on advanced harmonic concepts, as well as an array of rhythmic styles. The series also covers aural transcription, transcribed solos for renowned pianists, re-arranged jazz standards and provides insight into practice routines. The accompanying CD features bass and drums play-along tracks with the option of stereo panning to highlight individual instruments.

In *Jazz Piano Fundamentals: Explanations, Exercises, Listening Guides and Practice Plans for the First Six Months of study*, premier jazz pianist and author of 15 jazz piano books Jeremy Siskund (2021) delves into foundational aspects of jazz piano covering rote exercises, swing rhythm, articulation, coordination exercises, jazz patterns (licks), comping, chord sequences, practicing tunes, voicings, blues form, bass lines, improvising, altered dominant scales and guided listening.

In *Jazz Piano Fundamentals (Books 2): Explanations, Exercises, Listening Guides, and Practice Plans*, Siskund (2022) takes a more in-depth approach to these fundamentals. The book provides step-by-step lessons geared towards achieving mastery in jazz piano technique, comping, closed position chord voicings, advanced voicings, rhythm changes, scales, chord progressions, jazz harmony (chord scale relationships), improvisation, listening guides, practice plans, guided practice, jazz forms and structure, learning repertoire by ear, reharmonisation, transcription and prescribed repertoire from the *Jazz Real* book (lead sheet). Both books provide online links to video content and demonstrations.

### **2.15.2 Academic research**

In the doctoral study *Jazz pedagogy for the classical piano teacher*, Trapp (2020) focuses on the jazz piano curriculum at the beginner and intermediate levels. The study aims to provide solutions for classical piano teachers who may lack familiarity with the jazz art form. By interrogating the jazz process of skill acquisition for teaching practice, the study proposes a curriculum that encompasses aural training, practice techniques, scales, patterns, learning

repertoire, harmonic progressions, chords, transcribing recordings, extracting motives, creativity, comping, blues progression, jazz articulation, swing style, understanding jazz harmony, jazz improvisation, voice leading in improvisation, blues bass lines, reading lead sheets and a jazz listening list. This curriculum is designed to facilitate a creative approach for classical piano teachers to engage with the jazz idiom.

Danylet's (2019) study contends that jazz piano private instruction has been inadequately investigated. His case study investigates the main elements of jazz piano learning and proposes a systematic jazz piano teaching approach based on the formative experiences of highly acclaimed jazz pianists (Danylets 2019). The findings offer valuable insight into the significance of practice, technical development, listening experiences, musical environments, aural skills, audiation, learning jazz styles, improvisation and the importance of live performance, performing with peers and participation in music camps. The integration of learning material (repertoire) and jazz standards with a practice routine, transcription, guided listening and self-study is proposed as a comprehensive jazz piano study.

In Farrugia's (2020) study, a collection of five etudes that are composed for jazz piano embody various fundamental concepts and approaches essential for jazz piano study. These compositions draw inspiration from the jazz piano styles and concepts, both melodic and harmonic, of key modern jazz pianists during the influential period from 1940 to 1960. The melodic, harmonic, rhythmic, and stylistic concepts covered in these etudes encompass several areas of study, including chord progressions, chord voicings, scales, chord-scale applications, melodic phrasing, developing motifs for improvising, melodic devices and solo piano performance techniques.

In Herzig's (1997) study, the elements of jazz piano pedagogy were examined through content analysis (jazz literature) and empirical research (interviews with jazz piano performers and pedagogues). This approach aimed to identify the instructional components inherent in jazz piano pedagogy. By comparing qualitative and quantitative content analysis with interview data from jazz pedagogues, focusing on methods of teaching and learning jazz piano, the study revealed several common areas of emphasis in jazz piano pedagogy. The broad categories included (theory, chord construction, scale construction), (creating harmonic accompaniment, voicings), technique, rhythm, syncopation, melodic improvisation, chord-scale relationships (stylistic characteristics, jazz piano styles,

jazz styles), (listening suggestions and aural training), transcription and jazz standard repertoire (Herzig 1997). The study suggests that effective jazz piano pedagogy involves a blend of individual applied lessons, interaction with peers and performances and learning from jazz method books (Herzig 1997).

Dednam's (2019) study provides valuable insight into jazz piano pedagogy within the context of a South African higher education institution. Employing an autoethnographic approach, the research centres on the self-reflective teaching practices of the researcher, drawing from the theoretical concepts of Csikszentmihalyi's (1990) flow theory and Vygotsky's (1978) zone of proximal development. The primary objective of the study is to enhance the learning experience of tertiary jazz piano students through autoethnographic exploration, observation and self-reflexive teaching practices. The application of the zone of proximal development contributes to improved students' learning, while flow theory guides teaching methods and feedback.

Dednam's (2019) practice schedule incorporates a rubric checklist and teaching and learning strategy focusing on various aspects such as technique exercises, technical work (scales), melody, harmony, harmonic progressions, rhythm, improvisation, sight reading, tone, pitch, melodic continuity, and expression. In addition, the teaching approach includes transcribing solos, jazz form, and improvisation. The selection of jazz repertoire showcases the various fundamental jazz styles and jazz forms (blues, rhythm changes) within the jazz idiom (Dednam 2019).

Literature concerning South African jazz music relies primarily on interviews emphasising musical characteristics, historical context, the development of stylistic characteristics, performance culture and learning methodologies, as highlighted by Sepuru (2019). Sepuru's (2019) study sheds light on the diverse viewpoints and approaches to musical styles adopted by ten South African jazz pianists. The primary themes of her study explore the development of unique musical identities and personal styles contributing to the creation of a distinctive South African jazz sound. While the study delves into the educational background and formative influences shaping these pianists' styles, it does not extensively investigate their formal music training. The styles of these South African jazz pianists are influenced by Afro-American jazz, which "incorporates indigenous elements into musical elements such as melody, harmony and rhythm" (Sepuru 2019, 159). Despite receiving formal training, the participants' musical foundation

was predominantly shaped through informal learning. This informal learning emphasised activities such as listening, transcribing, analysis of improvisation, rhythm, chord voicings, and performing jazz repertoire.

## **2.16 Online jazz piano degrees and courses**

'Online learning' is a ubiquitous term in higher education as online music courses develop rapidly with technological advances that supplement face-to-face learning (Blake 2018; Koutsoupido 2015; Martinez 2021). However, there are a limited number of higher education institutions offering online degrees in jazz performance. Berklee College of Music pioneered jazz education in the 1950s (Herbert 2008) and is regarded as a premier jazz institution in the world with over three million enrolments in online courses (Online.Berklee.edu).

Berklee online was established in 2002 and offers online courses, online certificate courses and online undergraduate and graduate degrees in music (performance, technology, composition, production, electronic music and interdisciplinary music studies). The undergraduate degree programme features a Piano Performance degree that focuses on technique, performance, and technology. The curriculum includes disciplines such as music production, music business, song writing, and theory enabling students to build a sustainable music career.

Berklee online offers an online undergraduate-level 12-week course in Jazz Piano and Advanced Jazz Piano. The jazz piano course focuses on melodic, harmonic, and rhythmic development and includes chord voicings, interpreting melodies, phrasing, bass lines, jazz style, swing, blues, standards and bossanova. In addition, technical work, improvisation and rhythms complete the multifaceted learning approach. The advanced jazz piano course builds on the jazz piano syllabus and emphasises solo piano performance techniques, jazz repertoire, chord voicings, hand independence, creating melodic lines in improvisation, stylistic performance, accompaniment, reharmonisation of the melody, melodic reinterpretation, the styles of key jazz piano performers, and the influence of Black gospel music. Both courses feature flexible play-along tracks for practising and enable the student to progress according to their own pace.

This study considered online jazz piano courses offered on the leading online course platforms referred to in online jazz piano courses offered in higher education.

Online jazz piano courses featured on Udemy (Udemy.com) were selected for this study. The courses were based on instructor and reviewer ratings and were similar to the UoT admission level and level of students. Number reviewed ('Learn Jazz Piano Today' by Willie Myette [instructor overall rating 4.6]) and number of students (n=9799). Myette's 'Learn Jazz Piano Today' course has approximately 4,900 enrolled students with a 4.8 rating based on 531 reviews. The learning materials include access to demonstrational videos, audio resources, play-along track, and quizzes. The course develops repertoire by focussing on melody, harmony, chord voicings, technique exercises, syncopation, comping, improvisation, sight reading music, ear training, improvisation, accompaniment, walking bass lines, scales, practice techniques and form.

Arthur Bird's 'Jazz Piano – Ultimate Beginners course for Piano and keyboard' (Udemy.com) offers 143 step-by-step lessons to learn to play jazz piano. The number of students enrolled is 9,475, and the course has a 4.8 overall course rating. The comprehensive course structure encompasses chord-scale relationships, harmony, accompaniment, rhythm, chord voicings, advanced chord voicings, ii-v-I chord progression, comping, swing rhythm, syncopation, walking bass lines, improvisation, various technique exercises and repertoire. The learning outcome involves the application of the various skills to perform jazz repertoire. The course content is presented in detailed lessons with demonstration videos and supplementary notes.

Open studio jazz course (OpenStudioJazz.com) developed by Peter Martin features Levels 1 to 4 jazz piano courses. The Level 1 jazz piano course focuses on the fundamentals of song form, improvisation, scales, chords, arpeggiation, broken chords, voicings and style or feel. The Level 2 jazz piano course delves into advanced concepts of solo piano playing, the blues form and style, advanced chord voicings, swing feel, scales, improvisation, repertoire, ear training, technique exercises, rhythm and guided listening.

Level 3 builds on the concepts from the previous level and includes advanced voicings, block chords, Brazilian jazz piano styles, improvising on different repertoire, advanced scales and technique exercises, harmony, analysis and transcription of jazz piano solos, jazz etudes, lead sheets, ear training, scales, and chord practice and interpreting repertoire.

Level 4 delves into solo piano performance techniques, performing in a duo format, performing in a trio fundamentals, harmonic progressions, drop two voicings, voice leading, comping, rhythmic accompaniment patterns, and exercises and performance using jazz articulation and expression and modern jazz composition.

Backing tracks, play-a-longs, practice routine, guided practice session, workbook, quizzes, interactive learning experience with the 'living notation' technology allows students to follow the music and demonstrations in real time with interactive notation.

Udemy and Open Jazz Studio provide courses that do not grant accredited certifications. These offerings fall under user-generated content and should be considered when seeking online jazz piano insights.



### **3 Methodology**

This study seeks to determine the essential elements of current online jazz piano curricula at the higher education level that influence instructional design and facilitate online jazz piano learning in music programmes. This section focuses on the research design employed in this study, data sampling, collection and analysis.

#### **3.1 Research design**

The study adopted a qualitative approach and interpretive research paradigm to garner a rich description of a multifaceted phenomenon (Creswell 2014). The study employed the desk research method to investigate online jazz piano curriculum at higher education level. The desk study focused on the challenge of online learning and developed a conceptual framework for an online jazz piano teaching. An exploratory research design was employed to gain information on the less-researched topic (Given 2008; Kumar 2011). The systematic literature review methodology was employed to provide an overview of a specific research problem and “evaluate the state of knowledge on a particular topic” (Snyder 2019, 334). The literature reviews engaged theory development (Baumeister & Leary 1997; Torraco 2016) and provided a basis for developing a new conceptual framework and mapping the progress of specific research over a certain period (Snyder 2019).

The constructivist approach allows knowledge to be constructed through meaning and real-life experiences. This knowledge is fundamental in determining an online music learning environment that caters for specific student needs (Leow et al., 2016).

Underpinned by a transformative paradigm, the interpretative qualitative data provides insight into social justice issues and the needs of marginalised student populations (Mertens 2007).

##### **3.1.1 Desktop study and sampling**

To gain insight into online jazz piano training, the study employed a systematic literature review, used purposive sampling and identified and selected available empirical evidence to answer the research questions.

The identified purposive sample population consisted of documents that provided information on the research problem and purpose. A systematic evaluation of various forms of documents, based on inclusion and exclusion criteria, provided historical insight into the research aims. Content analysis and appraisal of both electronic and printed documents (databases and internet-transmitted) from the broader identified population determined the relevance of the documents (Bowen 2009).

Documents provide wide coverage over time, events, and settings (Yin 1994). Due to the sparseness of information on this topic, documents were chosen from 1997 to 2023, as this time frame provided background information, historical insight into online music learning and showed the development of online jazz piano programmes. The literature gleaned was based on key words associated with jazz piano, jazz pedagogy, online jazz piano, online music education, distance education, e-learning, teaching and learning models, curriculum and conceptual framework in order to retrieve a comprehensive projection of papers. These included peer-reviewed journal articles, university theses, books, and online jazz piano programmes.

Inclusion criteria was based on the relevance of the document to the research problems and accuracy, authenticity, and credibility. Documents were assessed for comprehensiveness (covering the topic entirely or broadly) or selective (covering a few aspects of the topic). The original purpose and target audience of the documents were considered. Topics pertaining to jazz piano, jazz piano pedagogy, online jazz piano lessons, adult learning, online teaching and learning environments, e-learning, and conceptual frameworks were included in the study. Jazz piano method books were included in the sample that provided a comprehensive approach to jazz pedagogy that covers at least four of the focus areas: theory, technique, improvisation, harmonic accompaniment, rhythm, stylistic characteristics, aural training, and performance practice.

Documents published before 1997, non-peer-reviewed literature, and editorials and reviews were excluded from the study. Trapp's (2020) doctoral study suggests that literature in a three-decade duration from the 1980s to 2015 outlines the need for a holistic jazz pedagogical approach. This timeframe provides various insights regarding the development of jazz piano pedagogy that is vital to this study.

### **3.1.2 Data collection**

In qualitative studies, data collection involves gathering information to address the research questions (Creswell & Clark 2011). Documents provide meaning, understanding and insight to the research problem (Merriam 1988). This qualitative case study adopts document analysis as a data collection method as it provides a rich description of a phenomenon (Stake 1995; Yin 2009). Document analysis involves a systematic process which reviews and evaluates various forms of documents. The analysis examines and interprets data to gain knowledge and provide meaning and empirical knowledge to develop a conceptual model for online jazz piano teaching (Corbin & Strauss 2008).

To achieve a comprehensive interpretation of the research aim, the literature review employed several academic databases and electronic databases such as ProQuest, Scopus, JStor, ScienceDirect, SpringerLink, ResearchGate, and Elsevier. In addition, a Google Scholar search (Scholar.Google.com) provided a broad literature search that encompassed various disciplines. During the data collection phase, the researcher accessed qualitative documents based on specific inclusion criteria designed to uncover well-defined content that was relevant to the study. Documents which pertained to jazz piano, jazz piano pedagogy, curriculum, higher education institutions, online music education, distance learning, e-learning, blended learning, assessment, teaching and learning strategies, learning styles, teaching techniques, online platform preferences, assessment methods, and conceptual frameworks were analysed. The documents were chosen from 1997 to 2023 when jazz piano pedagogy and online learning emerged at higher education institutions.

The initial search was extended to major publishers of jazz pedagogical resources, Sher Music, Alfred Publishers, Hal Leonard, and Berklee Press. It was further condensed to comprehensive jazz piano method books, as outlined in Herzig's (1997) research, encompassing a minimum of five of the following elements: theory, technique, improvisation, creating harmonic accompaniment, rhythm, style characteristics, aural training, transcription, backing tracks, and play-a-longs. Additionally, the books were required to include accompaniment material in CD or multimedia format that incorporated online streaming, downloads, YouTube demonstration channels and multifunction audio players (see Chapter 2 on jazz piano pedagogy).

Qualitative audio and visual material from websites, electronic portfolios, archives, and online teaching and learning channels provided information on current online jazz piano courses at the higher education level.

The study employed Templier and Parè's (2015) six steps for data collection and reviewing of articles:

'Developing the research question(s) and objective(s), conducting a thorough literature search, screening for inclusion criteria, evaluating the quality of primary studies, extracting data, and analysing the collected data' (Templier and Parè' (2015, 116).

The data collection review process was iterative, refined, and synthesised to address the research questions and specific subject areas (Cronin et al., 2008). The primary purpose was to provide a comprehensive background of the current knowledge and identify the gaps in the literature (Green et al., 2006).

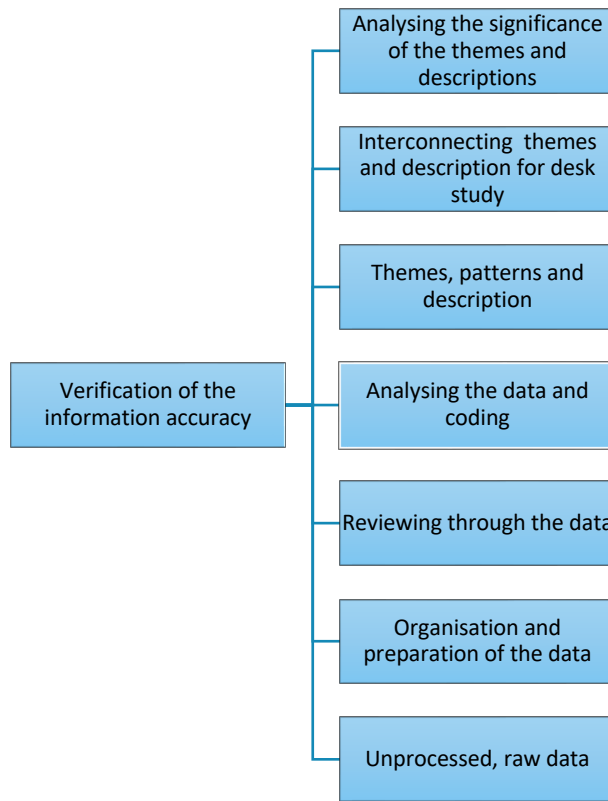
### **3.1.3 Data analysis**

According to Creswell and Clark (2011), qualitative data analysis involves a coding process that labels the data and then groups these codes into themes to reflect the broader perspective. The most suitable data analysis involves describing the setting and individuals, followed by a thematic data analysis approach (Stake 1995; Wolcott 1994).

This desktop study combined content and thematic analysis to interpret the secondary data collected through the systematic literature review. Content analysis categorises the information according to the research questions, and thematic analysis entails recognising patterns found within the data and emerging themes, which became the categories for analysis (Fereday & Muir-Cochrane, 2006). The iterative data reviewed process codes and constructed categories to identify significant themes relating to the research problem.

The data analysis aims to determine the essential elements of current online jazz piano courses at the higher education level and how these elements can influence instructional design. Furthermore, data analysis informs the development of a conceptual model for developing online jazz piano music courses to suit the specific challenges of music students at a UoT.

An overview of the inductive data analysis strategy employed by this study is represented in Figure 1, as adapted from Creswell (2014).



*Figure 1: Inductive data analysis strategy employed by this study.*

The data analytical process entails retrieval, selection, appraisal, and data synthesis contained in the documents. The document analysis yields data in various forms (excerpts, quotations, narrative passages), which are organised into themes, categories, and case models.

The researcher constructed patterns, categories, and themes from the lowest base by organising the data into progressively theoretical information units. The data was organised and prepared for analysis, cataloguing audio and visual material and sorting data according to type and source. Reading the data helps the researcher gain perspective and reflect on the meaning. The coding phase organises the data into categories and labels those categories using appropriate research terms (Rossman & Rallis 2012). The coding process incorporates Tesch's (1990, 142-149) eight steps to give attention to the research problem for developing codes and generating a description of the setting and themes for analysis, representing the study's major findings.

- Step 1: Read all the documents to understand the whole. Write down ideas that are generated from the reading.
- Step 2: Choose one document, determine what it is about, and write thoughts about the underlying meaning.
- Step 3: List all the themes and group related themes together.
- Step 4: Use the list of themes to analyse the dataset. The themes are represented by shortened codes and incorporated into relevant section of the document.
- Step 5: Employ descriptive language to identify themes and categorise them. Lines drawn between the categories show their interrelationships.
- Step 6: Select abbreviations for each category and arrange these codes alphabetically.
- Step 7: Collect the data within each category for initial analysis.
- Step 8: If needed, the current data is recoded.

The findings were conveyed in a narrative passage. A detailed descriptive discussion of the several themes included subthemes and multiple perspectives from statements and quotations. The final step in the analysis involved interpreting the findings and results. By determining what lessons were learned, the researcher found meaning by comparing the findings with information from literature or theories. Using this method, the researcher ascertained if the findings confirm or diverge from past information. New questions were raised by interpreting the data and analysis that the researcher failed to anticipate at the start of the study, which resulted in new interpretations and findings.

A table outlining online learning and online courses (Table 2) and an overlay matrix (Table 1) formed part of the analysis for the discussion and results sections.

#### **3.1.4 Quality of data**

Qualitative validity refers to the process the research employs to maintain the accuracy of the findings (Creswell 2014). Validity is recognised as one of the strengths of qualitative research as it sets out to determine the accuracy of research findings from the viewpoint of the researcher, participants, and reader (Creswell & Miller 2000).

The validity strategies employed in this research addressed trustworthiness, authenticity, and credibility. This study validated data throughout the data analysis

steps outlined in Figure 1. Qualitative reliability indicated that the researcher's approach was consistent with similar research projects. This research applied multiple validity strategies, document selection criteria, researcher self-reflection and thick detailed descriptions.

Quality assurance used various methods, and documents were screened according to the inclusion and exclusion data during the population and sampling phase (see Section 3.2.1). Documents were appraised for originality, completeness, credibility, and accuracy. Credibility was ensured by conducting a source (origin) check of journal articles, conference proceedings, and research reports selected for the study. These needed to be published in peer-reviewed journals, and dissertations needed to be accepted by the university. A validity check included assessing the research methodologies and the research objectives.

Internet sources selected for the study included online jazz programmes at established higher education institutions and online jazz piano courses on websites. Higher education institutions' online jazz piano courses were based on reputation, prestige, and alums, as well as online jazz piano course selections based on the number of subscribers and ratings. The research focus was on the accredited higher education courses, such as those offered at Berklee Online. Online jazz piano courses on websites such as Udemy and open jazz studios lend insight into elements of online jazz piano content teaching and learning strategies.

The findings were conveyed using detailed, thick descriptions to give the discussion an element of the setting and shared experiences. The many perspectives of the themes resulted in richer and more realistic results. The researcher's online teaching and learning background shaped the interpretation of the findings and added insight, creating an open and honest descriptive narrative of the results. Bias was minimised in the study by adhering to inclusion and exclusion criteria during the selection of data for the systematic literature review. (Moher et al., 2009).

### **3.1.5 Ethical concerns**

The systematic literature review and document analysis were only used for research purposes. Conflict of interest, in the form of intellectual bias or academic interest bias, was minimised in the study by following inclusion and exclusion

criteria when selecting data for the systematic literature review (Moher et al., 2009). The study did not use data from a UoT.

### **3.1.6 Limitations**

This study employed purposive sampling and focused solely on the online jazz piano curriculum at the higher education level. However, it was important to acknowledge that the socio-economic backgrounds of the students, as well as the varied levels of university funding dedicated to technology infrastructure, varied significantly across these settings. While these factors did not directly influence the main areas and outcomes of the study, they offered insightful context for enhancing the interpretation and discussion of the results.

Although triangulation was preferred and the lived experiences of both educators and students should have been considered, online jazz piano learning at the higher education level was in the infancy stages. Hence, the primary basis for gaining knowledge and understanding was via the review of online jazz piano documents and related literature. The objective was broadened to include method books due to the limited amount of online jazz piano courses. A preliminary search indicated that many online jazz piano courses offered jazz piano as an elective and provided a general overview of the subject. Method books served as proposed curriculum and benchmarked online courses.



## **4 Analysis of data/discussion**

This research investigates the essential elements of the current jazz piano curriculum at the higher education level, including online jazz piano elements. The purpose of the study was to identify musical elements for instructional design and facilitation and thereafter develop a conceptual framework for online jazz piano teaching to suit the specific challenges of the UoT music students.

Following the document analysis, the theses and method books provided valuable pedagogical insights and the online platforms for learning jazz piano were deemed informative, current, and relevant. The systematic review of the current literature on jazz piano curriculum included six pedagogical studies, 14 method books, and six online courses specifically tailored for jazz piano at a higher education level.

The data analysis process entailed retrieval, selection, appraisal, and data synthesis contained in the documents. The data was prepared and organised according to type and source and thereafter into themes, categories, and case models. Patterns, categories, and themes were established from the lowest information unit to theoretical insights. The coding phase organised the data into categories and labelled these categories using relevant research terms following the approach outlined by Rossman and Rallis (2012). Thematic data analysis was employed to interpret the primary data and systematically categorise the information in alignment with the research questions.

### **4.1 Research Question 1: What are the essential musical elements of the current jazz piano curriculum at the higher education level?**

Extensive content analysis and data coding revealed the identification of 129 crucial musical elements extracted from 26 data sources, as outlined in Table 1. These related elements were organised into 29 themes from harmony to self-study. Additionally, the sub-categories within these themes underwent analysis to determine the number of data points and individual elements associated with each.

The data also incorporated non-musical themes such as jazz listening, musical environments, live performances, practice routines, and self-study. Specific themes like chords, jazz improvisation, repertoire, rhythm, and scales exhibited numerous data points accompanied by related subcategories. For instance, within the repertoire theme, there were distinctions made between jazz standards and

new melodies constructed based on existing jazz standard chord changes. An example of this is the transformation of the jazz standard 'Stella by Starlight' into 'Stella by Candlelight' (Harrison 2011).

The essential musical elements highlighted in the data provided valuable insights into current jazz piano curriculum topics and the essential elements for jazz piano pedagogy. These elements are recognised as fundamental concepts for a jazz piano curriculum, forming a basis for advanced study and continuous adult learning.

The essential musical elements were coded and grouped according to the related themes that spanned topics from harmony to self-study. These elements were systematically coded into 19 themes extracted from the overall data. The themes adhered to standard nomenclature, primarily reflecting the content found in jazz curriculum data.

Pedagogical sources (Trapp 2020; Danylets 2019; Weir 2007; Santisi 2009) concentrated on the systematic acquisition of fundamental principles in jazz piano and jazz piano curricula and aligned with the themes identified. Farrugia (2020) took a unique approach to jazz piano pedagogy by composing jazz etudes that embody the application of thematic concepts. South African pedagogues Dednam (2019) and Sepuru (2019) directed their focus towards fundamental aspects of jazz piano, including technique, technical exercises, tone, pitch, sight-reading, transcription, and jazz styles.

In higher education, jazz piano curricula, method books, online courses and internet platforms, highlighted by Danylets (2019) and Herzig (1997), are extensively employed to supplement individual lessons and serve as self-study tools (see Table 3).

**Table 3: Essential musical elements of current jazz piano curriculum.**

Essential elements for jazz piano teaching	∞
<b>Harmony</b>	50,0
Jazz harmony	15,4
Reharmonisation	7,7
Creating melodies for harmony	3,8
Modal harmony	3,8

<b>Melodic concepts</b>	3,8
Melodic phrasing	3,8
Melodic continuity	3,8
Playing the melody	7,7
Intervals	7,7
Modal melody	3,8
Harmonising the melody	15,4
Melodic interpretation	7,7
Articulation	7,7
Phrasing	7,7
Melodic devices	3,8
<b>Chords</b>	30,8
Chord construction	3,8
Chord voicings	80,8
Chord substitutions	3,8
Block chords	3,8
Advanced chord voicings/shell chords	38,5
Alterations and tensions	3,8
Drop 2 voicings	11,5
Upper structure triads	3,8
Diminished chords	3,8
Chord inversions	3,8
Chord patterns	3,8
Chord extensions	7,7
Arpeggiation	7,7
Broken chords	7,7
<b>Rhythm</b>	46,2
Swing feel/style	19,2
Syncopation	15,4
Rhythmic displacement	3,8
Bossanova	3,8
Rhythmic styles	7,7

<b>Chord progressions</b>	19,2
Harmonic progressions	15,4
Voice leading	7,7
ii-v-I progression	11,5
<b>Accompaniment</b>	11,5
Comping	46,2
Creating harmonic accompaniment	3,8
Rhythmic accompaniment patterns	7,7
Jazz comping styles	11,5
<b>Theory</b>	11,5
Scale theory	3,8
<b>Scales</b>	61,5
Scale construction	3,8
Advanced scales	3,8
Altered dominant	3,8
Modes	15,4
Diminished scales	3,8
<b>Jazz improvisation</b>	65,4
Chord-scale relationship	15,4
Patterns	11,5
Voice leading in improvisation	3,8
Chord-scale applications	3,8
Melodic improvisation	15,4
Improvisation analysis	3,8
Contemporary jazz improvisation techniques	3,8
Improvisation techniques (style, motivic, modulation)	3,8
Approach notes	3,8
Multiple voice improvisation	3,8
Horizontal and vertical improvisation	3,8
Developing motifs	3,8
<b>Bass lines</b>	26,9
Blues bass lines	3,8

<b>Style</b>	3,8
Stylistic performance	3,8
Jazz styles	30,8
Jazz piano styles	7,7
Brazilian jazz piano styles	3,8
Stylistic characteristics	3,8
Stylistic concepts	3,8
<b>Technique</b>	19,2
Technical development	3,8
solo piano performance techniques	19,2
Technique exercises	34,6
Coordination exercises/hand independence	7,7
<b>Tone</b>	3,8
Pitch	3,8
<b>Aural training</b>	42,3
Aural skills	3,8
Ear Training	15,4
Playing by ear	7,7
<b>Reading lead sheets</b>	11,5
<b>Transcription</b>	46,2
Transcribing recordings	7,7
Extracting motives	3,8
Analysis	3,8
Transcribing solos	3,8
<b>Repertoire</b>	61,5
Learning material (repertoire)	3,8
Jazz standards	23,1
Jazz etudes	3,8
Lead sheets	11,5
<b>Sight reading</b>	7,7
<b>Audiation</b>	3,8
<b>Blues</b>	38,5

Blues progression	3,8
<b>Jazz form</b>	23,1
Structure	11,5
Rhythm changes	19,2
<b>Jazz articulation</b>	3,8
Expression	7,7
<b>Creativity</b>	3,8
<b>Jazz listening</b>	7,7
Jazz listening list	7,7
Listening experiences	3,8
Guided listening	15,4
Listening suggestions	11,5
<b>Musical environments</b>	3,8
Peer interaction	3,8
Music camps	3,8
Performing with peers	3,8
<b>Modern jazz composition</b>	3,8
<b>Live performance</b>	11,5
Performing jazz repertoire	3,8
Duo performance	3,8
Trio performance	3,8
<b>Practice</b>	7,7
Practice techniques	11,5
Practice routine	19,2
Guided practice	7,7
Practice exercises	7,7
<b>Self-study</b>	3,8
Method books	7,7

The quantity of musical elements, also referred to as sub-themes, played a crucial role in identifying the prevalence of each theme. In Table 4, the number of elements associated with respective themes is presented. Themes with the highest count of elements included chords (14), jazz improvisation (12), melodic

concepts (10), style (6), scales (5), and rhythm (5). The number of elements serves as an indication of the frequency, complexity, and significance of each theme within the jazz piano curriculum data. Notably, chords, jazz improvisation, and melodic concepts garnered the most attention in the data. It is important to clarify that the number of elements did not impact the overall ranking of each theme.

**Table 4: Themes and number of elements.**

Themes	Elements N
Harmony	4
Melodic concepts	10
Chords	14
Rhythm	5
Chord progressions	3
Accompaniment	4
Theory	1
Scales	5
Jazz improvisation	12
Bass lines	1
Style	6
Technique	4
Tone	1
Aural training	3
Reading lead sheets	1
Transcription	4
Repertoire	4
Sight reading	1
Audiation	1
Blues	1
Jazz form	2
Jazz articulation	2
Creativity	1
Jazz listening	4
Musical environments	3
Modern jazz composition	1
Live performance	3

Practice	4
Self-study	1

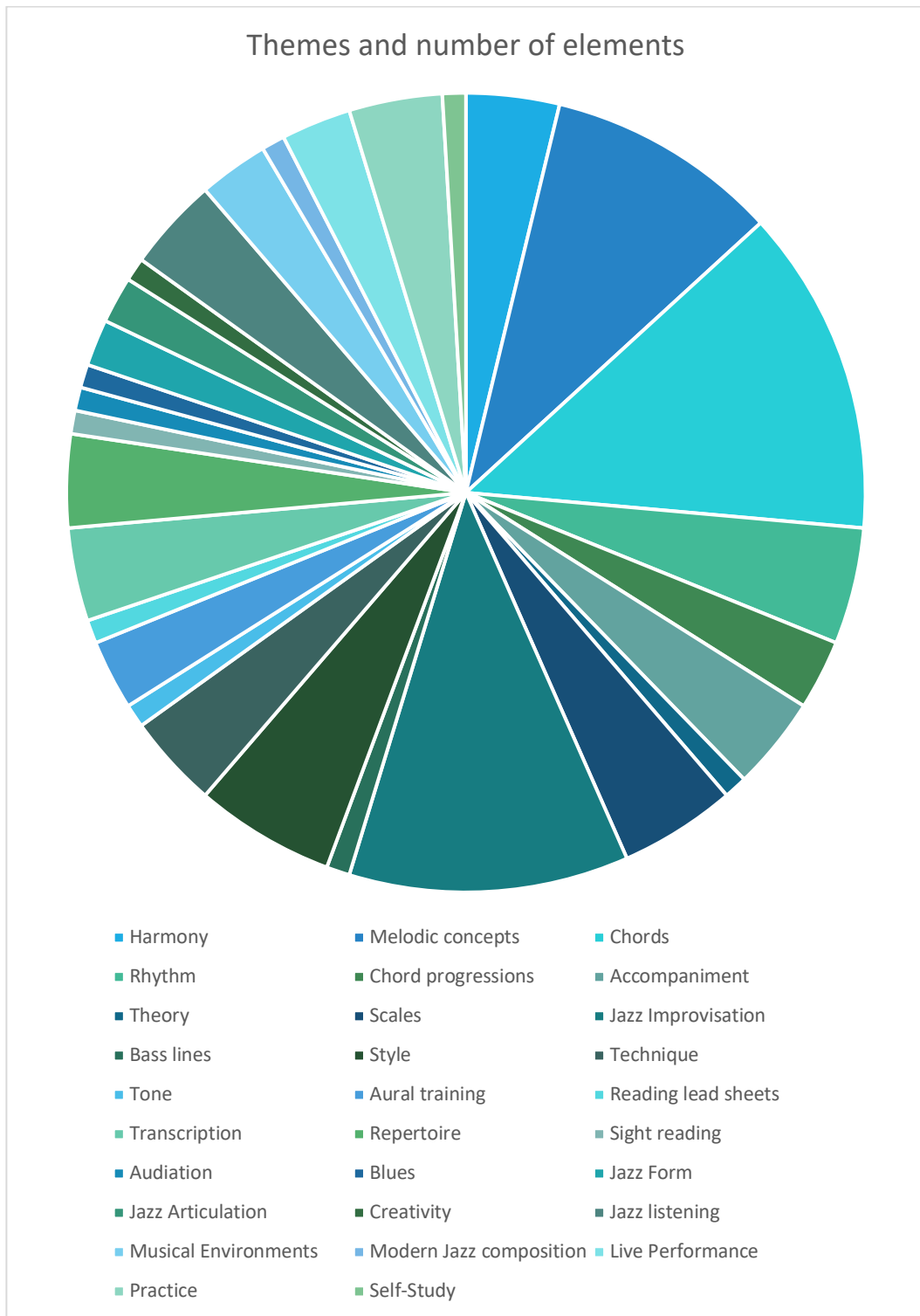


Figure 2: Themes and number of elements



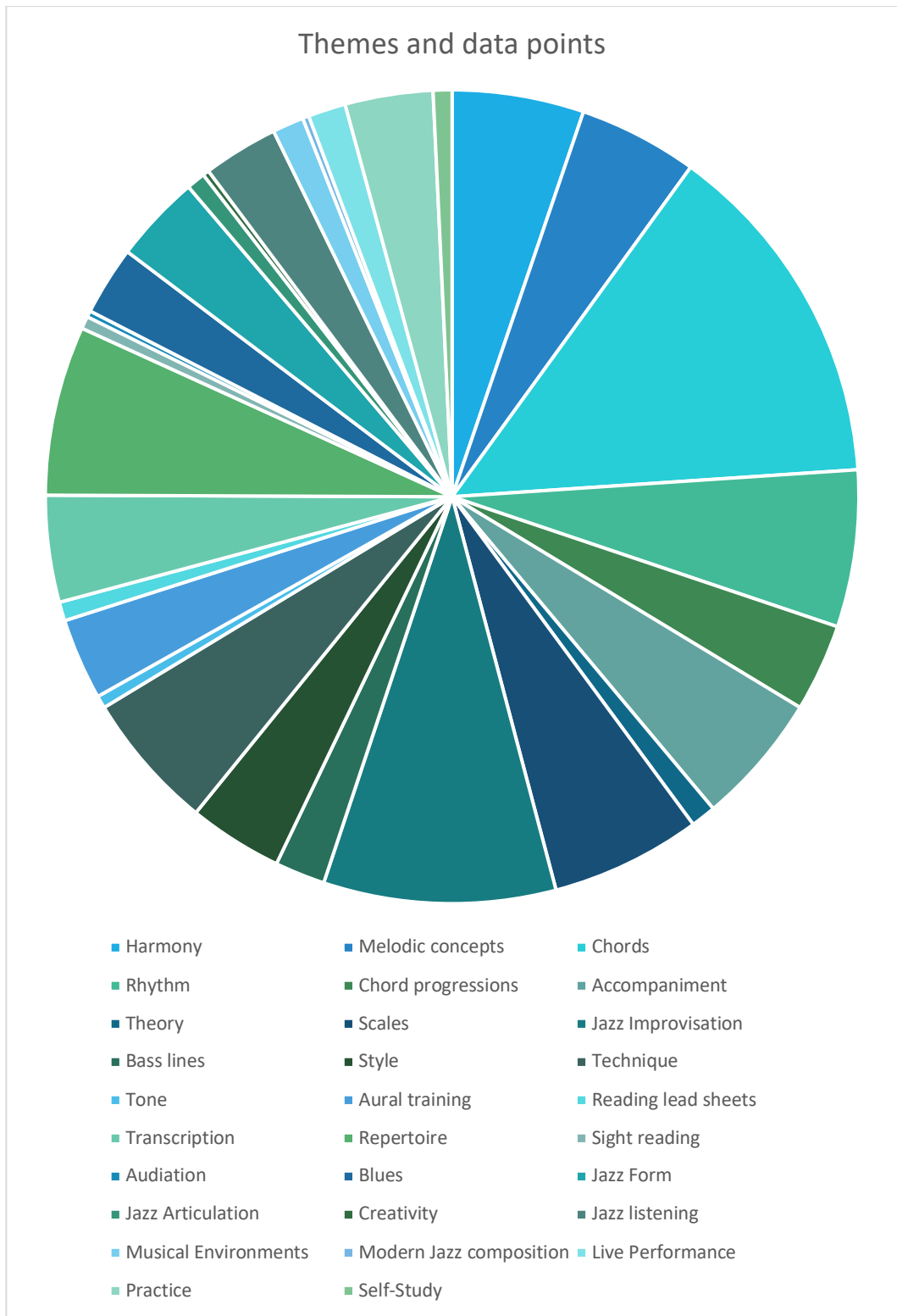
The quantity of data points played a pivotal role as a primary indicator for gauging the popularity of each theme. In Table 4, the data points highlight the frequency of individual elements within the dataset, allowing for the identification of patterns. The themes with the highest number of data points were chords (56), jazz improvisation (37), repertoire (27), rhythm (25), scales (24), technique (22), harmony (21), and melodic concepts (19). These findings underscore the significance of these elements within the jazz piano curriculum.

It is noteworthy that in the realm of jazz curriculum, harmony is treated independently from theory. It specifically pertains to chord notation and voice leading, in contrast to the classical genre, where harmony is integrated into the theory curriculum. While Herzig (1997) considers harmony to be a theoretical concept, the thematic analysis categorised harmony to encompass elements such as jazz harmony, reharmonisation, creating melodies for harmony, and modal harmony (see Table 5).

**Table 5: Themes and data points.**

<b>Themes</b>	<b>Data points n</b>
Harmony	21
Melodic concepts	19
Chords	56
Rhythm	25
Chord progressions	14
Accompaniment	21
Theory	4
Scales	24
Jazz improvisation	37
Bass lines	8
Style	15
Technique	22
Tone	2
Aural training	13
Reading lead sheets	3
Transcription	17
Repertoire	27
Sight reading	2

Audiation	1
Blues	11
Jazz form	14
Jazz articulation	3
Creativity	1
Jazz listening	12
Musical environments	5
Modern jazz composition	1
Live performance	6
Practice	14
Self-study	3



*Figure 3: Themes and data points*

#### **4.2 Research Question 2: What thematic musical elements are important for instructional design and facilitation in online jazz piano courses at the higher education level?**

Thematic analysis identified patterns inherent in the data, with emerging themes serving as the focal categories for analysis, as outlined by Fereday and Muir-Cochrane (2006). Through an iterative data review process, categories were constructed to identify significant themes relevant to the research question.

Table 6 illustrates the results of a quantitative content analysis applied to the thematic data extracted from the jazz curriculum data. These findings encompass 29 themes, with corresponding percentages: harmony (5.28%), melodic concepts (4.77%), chords (14.07%), rhythm (6.28%), chord progressions (3.52%), accompaniment (5.28%), theory (1.01%), scales (6.03%), jazz improvisation (9.30%), bass lines (2.01%), style (3.77%), technique (5.53%), tone (0.50%), aural training (2.67%), reading lead sheets (0.75%), transcription (4.27%), repertoire (6.78%), sight reading (0.50%), audiation (0.25%), blues (2.76%), jazz form (3.52%), jazz articulation (0.75%), creativity (0.25%), jazz listening (3.02%), musical environments (1.01%), modern jazz composition (0.25%), live performance (1.51%), practice (3.52%), and self-study (0.75%).

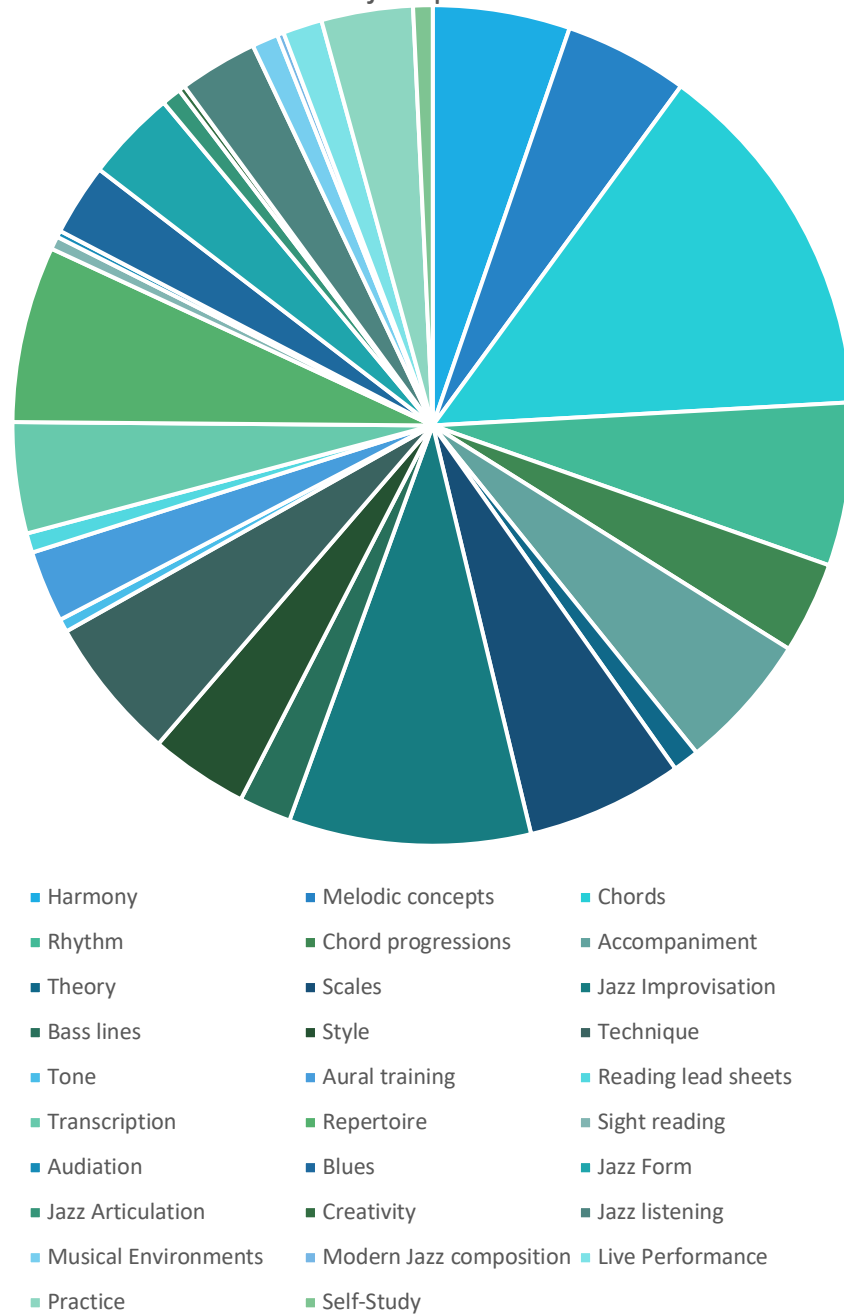
Thematic data points (Table 5), with a minimum of four data points, indicate that pedagogical studies emphasise various aspects, including harmony, chords, melodic concepts, jazz improvisation, rhythm, style, transcription, and technique. Method books, on the other hand, encompass a broader range of focus areas such as harmony, melodic concepts, chords, chord progressions, accompaniment, scales, jazz improvisation, technique, repertoire, transcription, blues, jazz form, and practice. In contrast, online courses exhibit a preference for covering topics like harmony, melodic concepts, chords, rhythm, accompaniment, scales, jazz improvisation, style, technique, and repertoire.

To enhance jazz learning effectively, it is crucial to integrate these themes through a combination of lessons, collaborative interactions, and performances with peers. The most impactful approach to mastering jazz involves actively listening to jazz recordings and honing one's skills by playing by ear, according to Herzig (1997) and advocated by Levine (1989) (see Table 6).

**Table 6: Thematic musical elements important for instructional design and facilitation in online jazz piano courses.**

<b>Theme ranking in data</b>	<b>Thematic musical elements important for instructional design and facilitation in online jazz piano courses</b>	<b>% of the whole contribution</b>
1	Harmony	5,28%
6	Melodic concepts	4,77%
17	Chords	14,07%
32	Rhythm	6,28%
38	Chord progressions	3,52%
42	Accompaniment	5,28%
47	Theory	1,01%
49	Scales	6,03%
55	Jazz improvisation	9,30%
68	Bass lines	2,01%
70	Style	3,77%
77	Technique	5,53%
82	Tone	0,50%
84	Aural training	2,76%
86	Reading lead sheets	0,75%
87	Transcription	4,27%
92	Repertoire	6,78%
97	Sight reading	0,50%
98	Audiation	0,25%
102	Blues	2,76%
104	Jazz form	3,52%
107	Jazz articulation	0,75%
109	Creativity	0,25%
110	Jazz listening	3,02%
115	Musical environments	1,01%
119	Modern jazz composition	0,25%
120	Live performance	1,51%
124	Practice	3,52%
129	Self-study	0,75%
Total		100%

Representation of thematic musical elements important for instructional design and facilitation in online jazz piano courses



*Figure 4: Representation of thematic musical elements important for instructional design and facilitation in online jazz piano courses.*

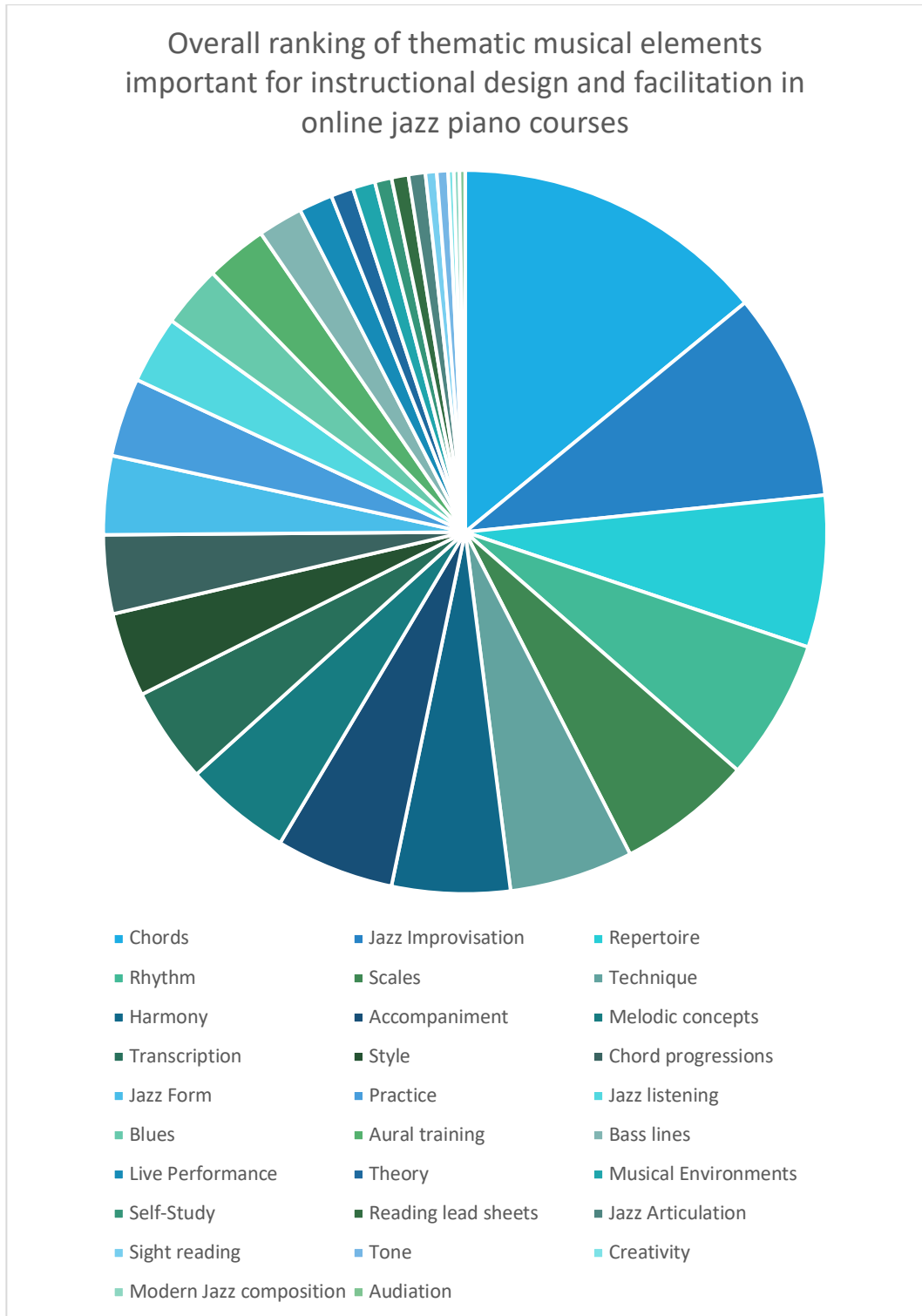
Table 7 provides an overall ranking of thematic musical elements important for instructional design and facilitation in online jazz piano courses. This ranking serves as a valuable guide for effective instructional design and facilitation in an

online jazz piano course. The identified elements contribute significantly to the overall design and delivery of instructional content, ensuring a well-rounded and comprehensive approach to teaching jazz piano in the online learning environment.

**Table 7: Overall ranking of thematic musical elements important for instructional design and facilitation in online jazz piano courses.**

1	Chords	14,07%
2	Jazz improvisation	9,30%
3	Repertoire	6,78%
4	Rhythm	6,28%
5	Scales	6,03%
6	Technique	5,53%
7	Harmony	5,28%
8	Accompaniment	5,28%
9	Melodic concepts	4,77%
10	Transcription	4,27%
11	Style	3,77%
12	Chord progressions	3,52%
13	Jazz form	3,52%
14	Practice	3,52%
15	Jazz listening	3,02%
16	Blues	2,76%
17	Aural training	2,76%
18	Bass lines	2,01%
19	Live performance	1,51%
20	Theory	1,01%
21	Musical environments	1,01%
22	Reading lead sheets	0,75%
23	Jazz articulation	0,75%
24	Self-study	0,75%
25	Sight reading	0,50%
26	Tone	0,50%
27	Creativity	0,25%

28	Modern jazz composition	0,25%
29	Audiation	0,25%



*Figure 5: Overall ranking of thematic musical elements important for instructional design and facilitation in online jazz piano courses.*



The foremost three themes – chords, jazz improvisation and repertoire stand as pivotal and defining characteristics of jazz and music education in the jazz context. Chords play a foundational role, providing a harmonic foundation for the music and delineating jazz styles through intricate chordal accompaniment patterns. Jazz is well-known for its emphasis on improvisation as it allows musicians to express creativity and individuality. Proficiency in jazz improvisation is a trademark of a skilled jazz pianist and requires a deep understanding of melodic concepts, chord-scale relationships, patterns, and various improvisation techniques. Repertoire spans a diverse range of compositions across various jazz styles (blues, dixieland, swing, bebop, cool jazz, hard bop, fusion, avant-garde, contemporary) from the early 1900s to the present day. Repertoire requires an understanding of the historical background and context of the piece and serves as a platform for the performer to showcase their interpretation, creativity and authenticity.

Transcription plays a crucial role in the students' progress, encompassing the notation of a recorded section that comprises various elements such as melodic phrases, rhythms, chord progressions, improvised solos, and other musical components within a jazz performance recording (Trapp 2020; Danylets 2019).

Danylets (2019) emphasises the significance of engaging in jazz listening, which involves guided listening for class discussions. The act of listening to assigned jazz recordings enhances students' comprehension of music and fosters the development of essential critical listening skills. Self-study, also known as self-education, involves students cultivating their jazz piano skills through individual practice, drawing on personal experience and knowledge (Herzig 1997; Danylets 2019).

Trapp (2020) underscores the importance of aural training, which entails developing the ability to recognise and replicate melodies, harmonies, and rhythms. Cultivating the inner ear is a crucial skill for acquiring proficiency in learning and playing music by ear (Danylets 2019).

The blues is a fundamental jazz style and a musical form that is easily comprehensible, given its structure of 12 bars and repetitive chord changes. Jazz styles are widely employed to introduce students to jazz improvisation (Trapp 2020).

Accompaniment encompasses the pianist's role in delivering harmonic support and rhythm through the rhythmic rendition of chords within the context of solo or ensemble performance and is relevant to the jazz style. Mastering this skill is crucial for students as it elevates the dynamics of both the repertoire and the ensemble (Trapp 2020).

Jazz articulation refers to the use of melodic devices (staccato, legato, and accents) to convey specific nuances of expression. It plays a role in shaping the phrasing and interpretation of repertoire (Trapp 2020).

Audiation, mentioned by Danylets (2019), is an important theme that pertains to jazz pedagogy and refers to the work by music educator Edward Gordon (2012). Audiation is a cognitive process involving constructing meaning to musical sounds. The theory highlights the difference between playing technically or musically and hearing the sound of jazz in accordance with jazz language, which is a challenge for many jazz students and educators trying to convey this concept.

#### **4.3 Research Question 3: How do the thematic musical elements inform a conceptual framework for developing online jazz piano music courses to suit the specific challenges of the UoT music students?**

The thematic musical elements derived from the data analysis were ranked within the top 21, with a base level of 1%. These top 21 themes are well-suited for constructing a conceptual framework for online jazz piano music education, applicable to both undergraduate and postgraduate degree programmes.

The findings presented in Table 8 indicate a strong emphasis on chords and jazz improvisation within the jazz piano curriculum. These elements not only received most of the data points and elements, as evidenced in Table 4, and also garnered significant attention in method books by Santisi (2009), Harrison (2011), Davis (2015, 2019) and Cion (2020). Method books particularly dedicate substantial sections to various facets of the chord theme, underscoring the intricate nature of this theme and its pivotal role as a key concept in online jazz piano courses.

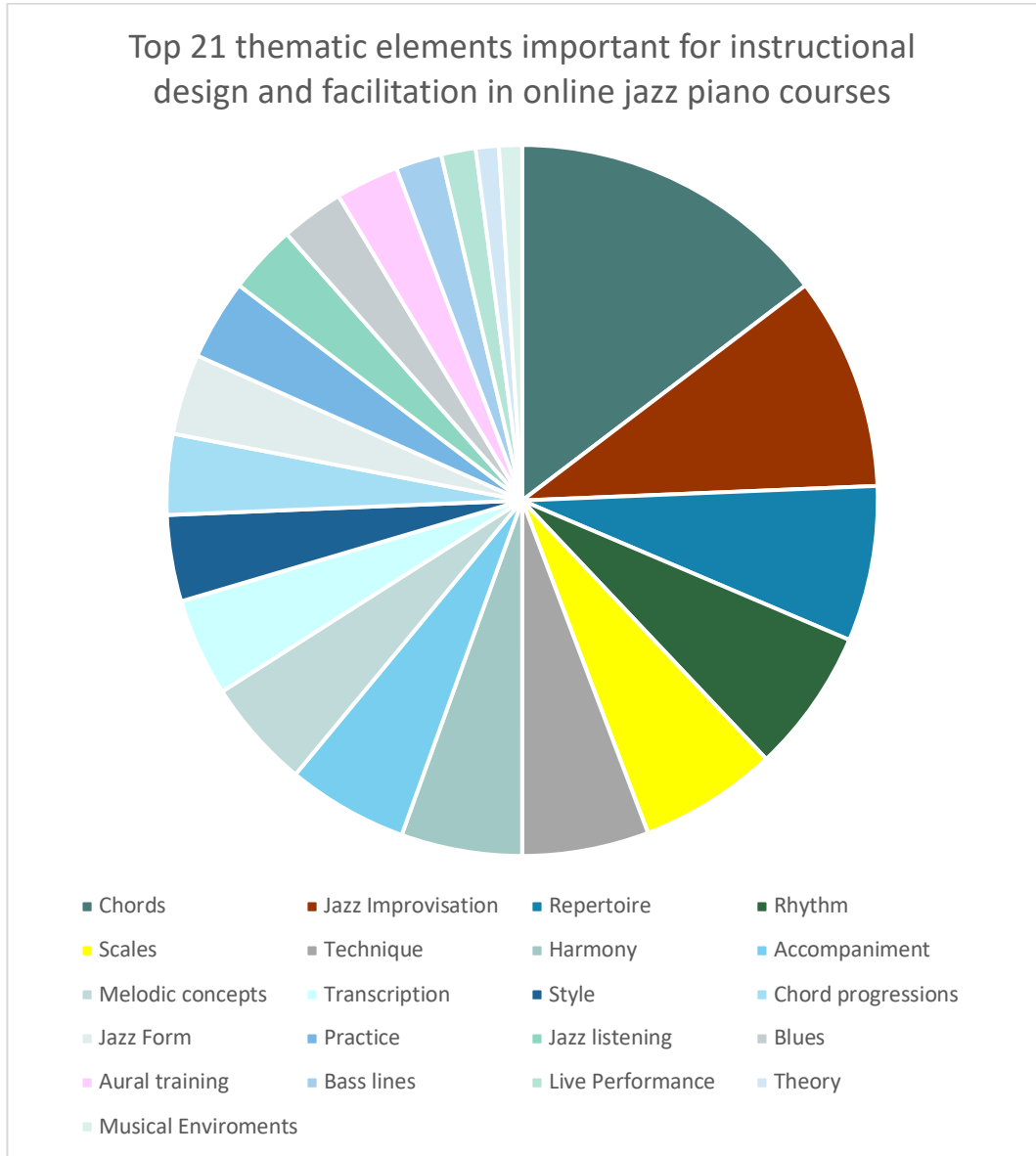
Several jazz piano method books from publishers Sher and Hal Leonard and the book *Jazz Piano Concepts and Techniques* (Valerio 1998) concentrate exclusively on chord construction and voicings. The jazz improvisation theme featured extensively in pedagogical studies, method books and online courses,

emphasising its central role in the jazz genre. Numerous books delve into specific jazz improvisation topics, covering patterns (Coker 1982), modern concepts (Baker 1990), creative improvisation (Reeves 2006), and effective improvisation practice techniques (Crook 2015).

Most of the resources examined incorporate repertoire examples to illustrate the application of jazz concepts. Prominent pedagogues like Siskund (2021, 2022), Weir (2007), Levine (1989), and Santisi (2009) stress the importance of interpreting the lead sheet, which represents jazz standards formatted in lead sheet notation. This skill is deemed crucial in jazz piano performance as it requires drawing on stylistic elements from jazz history and harmony – essentially symbolising the pinnacle of the learning journey in jazz piano. De Lima (2017) highlights the importance of musical environments (see Table 4) and focuses on music jam sessions. Performing music in a band context imbues anthropomorphic properties of active listening and responding to musical cues and nuances. Berliner (1994) emphasises the aural tradition and value of learning jazz through playing by ear and listening to jazz recordings.

**Table 8: Top 21 thematic musical elements important for instructional design and facilitation in online jazz piano courses.**

1	Chords	14,07%
2	Jazz improvisation	9,30%
3	Repertoire	6,78%
4	Rhythm	6,28%
5	Scales	6,03%
6	Technique	5,53%
7	Harmony	5,28%
8	Accompaniment	5,28%
9	Melodic concepts	4,77%
10	Transcription	4,27%
11	Style	3,77%
12	Chord progressions	3,52%
13	Jazz form	3,52%
14	Practice	3,52%
15	Jazz listening	3,02%
16	Blues	2,76%
17	Aural training	2,76%
18	Bass lines	2,01%
19	Live performance	1,51%
20	Theory	1,01%
21	Musical environments	1,01%

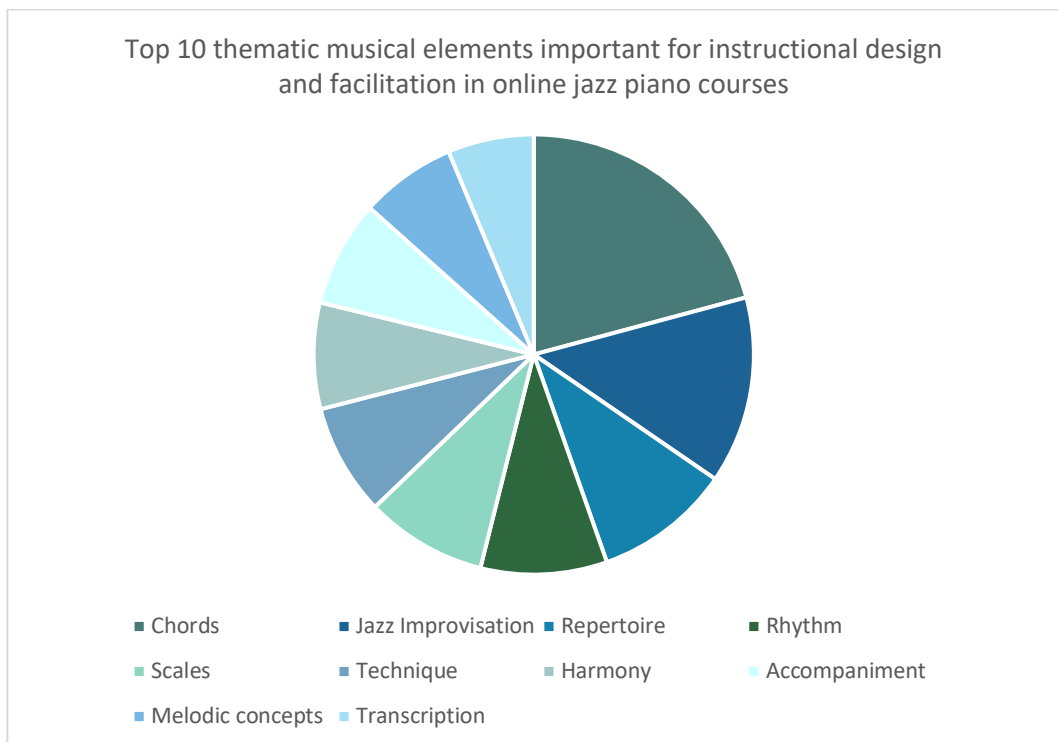


*Figure 6: Top 21 thematic elements important for instructional design and facilitation in online jazz piano courses*

Table 9 shows that the thematic musical elements derived from the data analysis were ranked within the top ten with a base level of 1%. The top ten themes are suitable for the development of a conceptual framework for online jazz piano music at the certificate or higher certificate level.

**Table 9: Top ten thematic musical elements important for instructional design and facilitation in online jazz piano courses.**

1	Chords	14,07%
2	Jazz improvisation	9,30%
3	Repertoire	6,78%
4	Rhythm	6,28%
5	Scales	6,03%
6	Technique	5,53%
7	Harmony	5,28%
8	Accompaniment	5,28%
9	Melodic concepts	4,77%
10	Transcription	4,27%



*Figure 7: Top 10 thematic elements important for instructional design and facilitation in online jazz piano courses*

#### 4.4 The UoT music student demographics

The UoT serves the needs of students who have historically faced disadvantages, and those enrolled in the music programme confront difficulties rooted in a lower

socio-economic status and a lack of infrastructure (Bridge 2015). A significant number of students lack essential tools such as musical instruments, smartphones, laptops, and internet connectivity. Many of these students rely on funding from the National Student Financial Aid Scheme to fund their studies.

Students also grapple with financial obstacles related to registration, outstanding fees, transportation expenses, Wi-Fi access, mobile technology, and lodging. To engage in online teaching and learning effectively, university music students require access to digital resources. Unfortunately, financial constraints hinder their ability to acquire the necessary resources for successful online education. Furthermore, due to a lack of financial support from the university, students are compelled to use mobile technology-based apps for learning, as they are unable to afford essential online teaching tools.

#### **4.5 Adapting the thematic musical elements to inform a conceptual framework for developing online jazz piano music courses to suit the specific challenges of the UoT music students**

Most music students are predominantly self-taught and encounter challenges accessing formal training. The students possess advanced aural skills due to their performance backgrounds, as many perform at church services. Developing a suitable online jazz piano course needs to address the challenges of the students. Adapting the themes to suit their challenges involves focusing on and emphasising the relevant elements within the themes that address the UoT music students' challenges.

##### **4.5.1 Chords**

Chord progressions include typical South African jazz piano chord progressions, voicings, inversions, and patterns that define the South African jazz piano style.

##### **4.5.2 Jazz improvisation**

Jazz improvisation addresses the challenges of chord-scale relationship and applications, voice-leading, developing motifs, and horizontal and vertical improvisation. Jazz improvisation also features the improvisatory work of the progenitors of the South African jazz piano style – Bheki Mseleku, Themba Mkhize, Moses Taiwa Molelekwa and Abdullah Ibrahim. The musical repertoire includes South African jazz piano pieces.

### **4.5.3 Rhythm**

Exploring rhythmic styles through creative exercises and practising rhythmic patterns found in South African music and various cultural groups enhances students' learning. Collaborative learning in drum circles and incorporating traditional percussive instruments into the learning process deepen the students' connection to their musical heritage and develop their rhythmic conception.

### **4.5.4 Scales**

Due to the absence of formal training, students lack technical skills on the piano. The focus of the scales encompasses scale construction, modes, and advanced techniques. Exercises target technical development and solo piano performance skills.

### **4.5.5 Technique**

Essential elements of jazz piano encompass technique exercises and solo piano performance techniques. An innovative teaching strategy involves conducting practice exercises in spaces that are easily accessible, using portable keyboards and incorporating peer mentorship and group lessons.

### **4.5.6 Accompaniment**

Most music students, primarily serving as accompanists in diverse performance spaces, need harmonic and rhythmic accompaniment skills within the jazz styles context. This emphasis on accompaniment often results in a deficiency in playing the melody. Engaging with melodic concepts and articulation in various jazz styles benefits their performance skills.

### **4.5.7 Transcription and style**

Transcription activities aim to enhance both notational and aural skills by analysing recordings featuring renowned international and local jazz musicians. Stylistic nuances are emphasised when interpreting and performing musical repertoire within the relevant jazz piano style.

#### **4.5.8 Chord progressions**

Harmonic chord progressions define the jazz styles contributing to the genre's distinctive sound. Analysing and mastering chord progressions of South African jazz repertoire broadens the students' harmonic palette and provides a foundation for stylistic interpretation and expression.

#### **4.5.9 Jazz form**

Understanding jazz form is crucial as it provides a framework for jazz improvisation and individual structures within various jazz styles. Learning repertoire that includes various jazz structures enhances the students' performance and aural skills.

#### **4.5.10 Practice**

Given the challenges students face, such as limited access to pianos and a lack of formal lessons, developing a practice timetable tailored to their circumstances is essential. This routine should address their specific challenges and instrument accessibility.

#### **4.5.11 Jazz listening and the blues**

Creating a jazz listening list and incorporating guided listening exercises featuring international and local jazz pianists is pivotal to actively engaging students in honing their aural skills. Additionally, blues, reminiscent of the cyclical chord structure and form of marabi, a South African jazz piano style with a similar socio-political background, is explored.

#### **4.5.12 Aural training and bass lines**

Ear training, initially covered in the first year as part of a module, is extended to the entire year. The quantity of lectures is increased to facilitate increased knowledge acquisition and cover a broader scope of content for students. A scaffolded teaching method for acquiring bass line skills is formulated and incorporated into the repertoire to strengthen students' bass line proficiency.



#### 4.5.13 Live performance

Live performances, including jazz repertoire workshop classes, repertoire lists for pianists, and low-pressure performance opportunities within their communities, aim to showcase student talent and boost confidence.

#### 4.5.14 Theory and musical environments

The integration of scale theory into the South African jazz repertoire workshops and ensembles and shorter practice sessions are emphasised during jazz piano lessons. Finally, fostering musical environments and ensembles where students perform with peers contributes to their overall growth and confidence.

**Table 10: Adapting the thematic musical elements to inform a conceptual framework for developing online jazz piano music courses to suit the specific challenges of the UoT music students.**

Themes	Elements	Adapting themes for the UoT music student context
Chords	Chord progressions Chord voicings Inversions	South African jazz piano style chord progressions.
Jazz improvisation	Chord-scale relationship and applications Voice-leading Developing motifs Horizontal and vertical improvisation	South African jazz piano improvisatory style – Bheki Mseleku, Themba Mkhize, Moses Molelekwa and Abdullah Ibrahim.
Repertoire	Learning material	South African jazz piano pieces.
Rhythm	Rhythmic styles	South African music polyrhythms.
Scales	Scale construction Modes Advanced scales	Technical development exercises, shorter practice sessions.
Technique	Technique exercises Solo piano performance techniques	Accessible practice spaces with portable keyboards. Group lessons and peer mentorship.
Harmony	Modal harmony Creating melodies for harmony	Strong feature in South African jazz piano style, enhances students' compositions.
Accompaniment	Creating harmonic and rhythmic accompaniment	SA jazz context and repertoire for solo and ensemble performance.

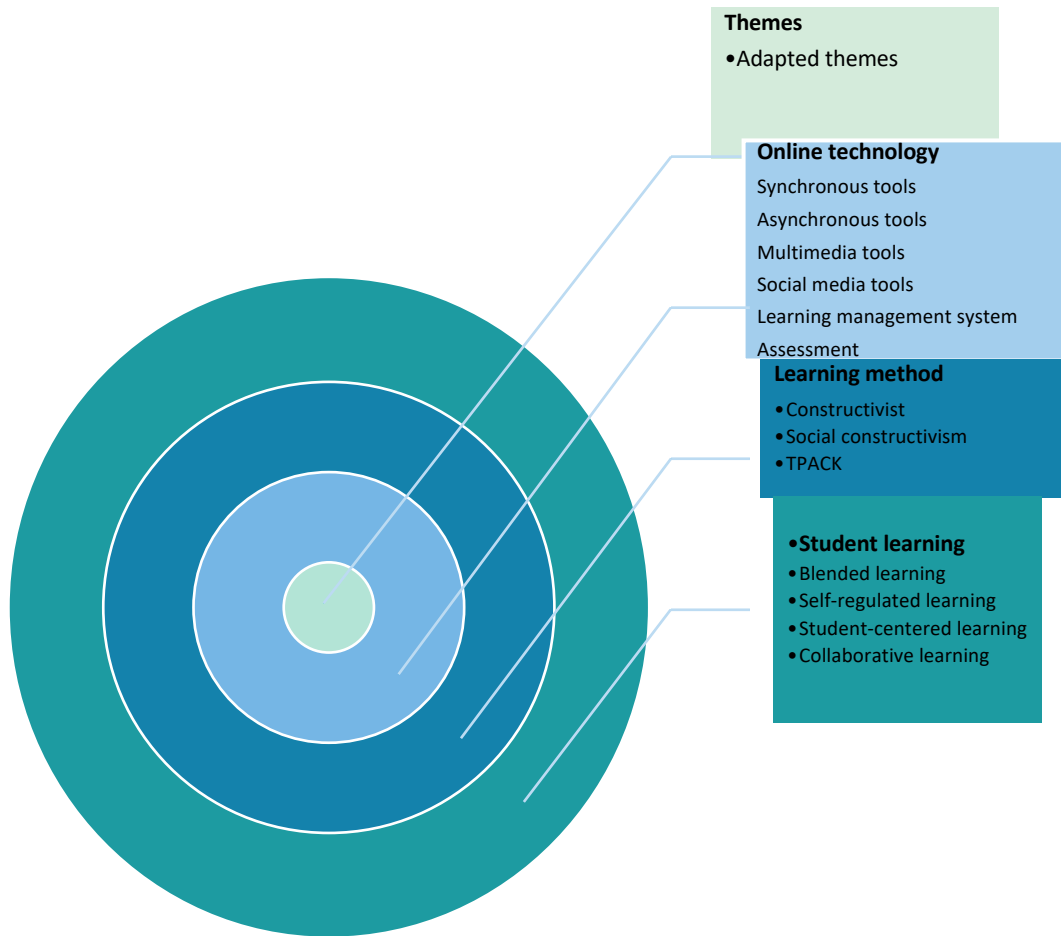
Melodic concepts	Playing the melody Articulation	Learning to play the melody and phrasing in the context of different jazz styles.
Transcription	Transcribing recordings	Developing notational and aural skills through the transcription process.
Style	Jazz piano styles	Interpret and perform repertoire with relevant stylistic concepts.
Chord progressions	Harmonic progressions	Analysing the harmonic chord progressions of South African jazz repertoire.
Jazz form	Structure	Include a variety of jazz forms in repertoire.
Practice	Practice routine	Practice timetable and improve access to instruments.
Jazz listening	Jazz listening list Guided listening	International and local jazz pianists feature in the listening list.
Blues	Blues style	Integrate the South African jazz piano style – ‘Marabi’ with the blues.
Aural training	Ear training	Increase the number of lectures for knowledge acquisition.
Bass lines	Bass lines	Scaffolded teaching method for acquiring bass lines incorporated into repertoire.
Live performance	Performing jazz repertoire	Jazz repertoire workshops, repertoire lists and ensembles.
Theory	Scale theory	Integrate scale theory into South African jazz repertoire.
Musical environments	Performing with peers	Creating musical spaces and ensembles.

#### 4.6 Instructional design

Johnson (2020) proposes that an online music programme requires a suitable instructional design that caters for the specific needs and challenges of the UoT music students and is effective in presenting meaningful learning opportunities. The online design comprises various components for effective learning to demonstrate knowledge acquisition and understanding. Literature shows that teaching approaches, learning methods, online technological landscape, student

competencies and knowledge are crucial components that provide the basis for an online music learning conceptual framework.

Drawing on the work of Johnson (2020) and the TPACK model (Mishra & Koehler, 2006), Figure 8 is an adaptation of the proposed conceptual framework for online jazz piano teaching at the UoT. The layers of concentric circles denote fluidity and correlation between the layers.



*Figure 8: Conceptual framework for online jazz piano teaching*

Determined by the UoT music student background and thematic content, the learning approach proposes four components: blended learning, self-regulated learning, student-centred learning, and collaborative learning.

#### **4.6.1 Blended learning approach**

In blended learning, various teaching and learning environments are integrated, including asynchronous learning networks, web-based teaching platforms, technology-based music applications, multimedia, social media tools, and online learning tools.

#### **4.6.2 Self-regulated approach**

Self-regulated learning achievement levels and success are based on practice, time, and commitment. Practice methods involve self-assessment and correction, leading to deliberate practising (Hallum & Bautista 2012), active student engagement, and student-controlled learning processes.

#### **4.6.3 Student-centred approach**

Student-centred learning engages the students with the thematic content and encourages them to control the pace of their learning. Peer evaluation, self-reflection and problem-solving activities form part of the students' music making (Hansen & Imse 2016) and encourage lifelong learning (Scott 2011).

#### **4.6.4 Collaborative learning approach**

Implementing a collaborative learning design within an online setting supports student learning (Ito et al., 2013). Collaborative, multimodal learning offers students a multifaceted approach to learning embedded in principles of a social constructivist learning theory. Live performance, online collaborations, multimedia, and social media virtual communities allow students to create knowledge and share experiences sustaining this interaction across various social media platforms (Wenger, McDermott & Snyder 2002).

### **4.7 Learning Method**

The implementation of online education involves guiding the integration of behaviourism, cognitivism, and social constructivism through a constructivist learning paradigm (Liu 2021). Social constructivism is well suited for online music learning and engages students in collaborative knowledge-building activities (Johnson 2017). Students actively interact with online communities, peers, and discussion groups through social and multimedia engagement. Furthermore,

integrating pedagogical knowledge with technology, exemplified by the TPACK model, is a vital aspect for maximising the advantages of technology tools used to enhance student learning.

## **4.8 Online technology environment**

Internet technology and online music education tools provide access to twenty-first-century classrooms and pedagogical development. Technology-based music applications aid in supporting and facilitating music instrument learning. Music technology examples include interactive music software that encourages creative activities (Johnson 2017), networked learning, the use of multimedia, incorporating music technology into the curriculum, and benchmarking national standards (Ng et al., 2013). Course content is available in digital formats such as Kindle and Apple Books with the added benefit of access to online audio tracks through streaming or download using a multifunction audio player.

### **4.8.1 Synchronous tools**

Synchronous teaching is facilitated using popular apps like Zoom, Google Meet, Google Hangouts, Skype, and FaceTime (Martinez 2021; Lisboa et al., 2020). There are several benefits associated with these networking technologies, including international performative collaboration, masterclasses, remote rehearsals, time flexibility, reduced travel, and the associated costs (Lisboa et al., 2020). Microsoft Teams, WhatsApp Video, and Telegram mobile technology applications gained popularity with the UoT music students because of their user-friendly interfaces and absence of time constraints.

### **4.8.2 Asynchronous tools**

Asynchronous tools allow students flexibility to access learning material at their convenience. Students benefit from the use of asynchronous tools to showcase repertoire performance. Audio recording software like GarageBand (GarageBand.com) enables the creation of recordings that can be reviewed later. iMovie (<http://www.apple.com>) facilitates video recording applications that can be used for viewing and evaluation. MOOCs provide educational materials, enabling many students to access and exchange knowledge resources.

#### **4.8.3 Multimedia tools**

The impact of media on music education is influenced by digital music devices, tablet computing and smart phone technology. User-generated content shared on video-sharing sites (YouTube, Instagram) serves as cyberspaces and participatory culture practices that facilitate experiencing, creating, and learning music in communities (Waldron 2009). Multimedia tools encourage the UoT music students to create and generate digital musical performances for sharing and publishing on the internet.

#### **4.8.4 Social media tools**

The widely used social media platforms, including Facebook, YouTube, X (formerly Twitter), Wikipedia, Google Docs, Wikis, and blogs, are highlighted as valuable tools for diverse music classes, promoting peer learning and group discussions. Popular social networks like Facebook are well-suited for connecting individuals with shared interests, enhancing both class and ensemble learning, and establishing online communities of practice. Social media applications based on mobile technology, such as WhatsApp and Telegram, functioned as tools for both audio and video recording.

#### **4.8.5 Learning management system**

The learning management system (LMS) is a versatile online technology tool that provides advantages for both students and instructors. It allows for both asynchronous and synchronous learning alternatives while serving as both an e-portfolio and an assessment tool. The UoT music students can upload assignments and assessments and remotely access course announcements and learning materials, including video and audio content, course materials, and discussion content.

#### **4.8.6 Assessment**

The strategy of assessing music online is advantageous in both formal and informal contexts, remaining closely tied to music learning. Research indicates that both summative and formative assessments play crucial roles in the realm of online learning. Informal assessments encompass expert lesson feedback, self-reflection, and peer comments. On the other hand, formal assessments may involve a recital grade, performance jury, or examination panel. Technology tools,

applications, and learning management systems offer additional platforms for both formal and informal assessments (Johnson 2020). Providing constructive feedback grounded in an assessment rubric is crucial for both student learning and revision.

#### **4.9 Conclusion**

The conceptual framework for online jazz piano lessons proposed in this study considered the main thematic elements, online technology, learning methods and student learning approach. The chapter presented a conceptual framework designed to suit the specific challenges of the UoT music students by adapting the main musical themes and integrating technology with pedagogical course content.

## **5 Conclusion/ Recommendations**

This study presented a conceptual framework for online jazz piano teaching at the UoT. This chapter summarises the study and provides recommendations for further research.

Through the qualitative case study approach, the following objectives were explored:

- What are the essential musical elements of the current jazz piano curriculum at the higher education level?
- What thematic musical elements are important for instructional design and facilitation in online jazz piano courses at the higher education level?
- How do these thematic elements inform a conceptual framework for developing online jazz piano music courses to suit the specific challenges of the UoT music students?

### **5.1 Summary of findings**

Following the document analysis, the theses and method books provided valuable pedagogical insights and the online platforms for learning jazz piano were deemed informative, current, and relevant. The systematic review of the current literature on jazz piano curriculum included six pedagogical studies, 14 method books, and six online courses specifically tailored for jazz piano.

Extensive content analysis and data coding revealed the identification of 129 essential musical elements extracted from 26 data sources, as outlined in Table 1. These related elements were organised into 29 themes, spanning harmony to self-study.

#### **5.1.1 Essential musical elements**

The 129 essential musical elements highlighted in the data provided valuable insights into current jazz piano curriculum topics and the essential elements for jazz piano pedagogy. These elements were recognised as fundamental concepts for a jazz piano curriculum and formed a basis for advanced study and continuous adult learning.



### **5.1.2 Thematic musical elements**

The ranking of thematic musical elements was important for instructional design and facilitation in online jazz piano courses. The ranking played a crucial role in guiding the creation of an effective and comprehensive approach to teaching jazz piano in the online learning environment.

Through data analysis, the thematic musical elements were ranked within the top twenty-one (see Table 8). These top 21 musical themes provided a solid foundation for constructing a conceptual framework for online jazz piano music education suitable for both undergraduate and postgraduate degree programmes. Additionally, the top ten musical themes proved particularly relevant for higher-certificate music programmes.

To address the specific challenges faced by the UoT students and ensure relevance in the South African context, the thematic musical elements were adapted, as outlined in Section 4.6 and Table 8. These adaptations focused on incorporating elements of South African jazz, including repertoire, style, and music performance practice.

The instructional design was carefully aligned with the adapted thematic musical elements, aiming to enhance learning by adjusting the learning method, student approach to learning, and integrating online technology, as depicted in Figure 8.

Drawing on the TPACK model, the learning approach integrated technology-based music applications to enhance student learning.

### **5.1.3 Synchronous and asynchronous, multimedia, and social media tools and the LMS**

Online teaching transcends geographical boundaries, making jazz piano lessons accessible to rural communities in remote areas. When developing online music learning environments, accessibility to infrastructure plays an important role. Online learning e-learning systems included texts, discussion forums, file sharing, recordings, and email. Microsoft Teams, WhatsApp Video, and Telegram mobile applications are popular due to their accessibility, user-friendly interfaces, and lack of time constraints, providing the UoT music students with time flexibility and reducing the need for commuting. Audio recording tools such as GarageBand

([GarageBand.com](http://GarageBand.com)) encourage students to create recordings that can be revisited later.

Digital music devices, tablet computing, and smartphone technology have paved the way for convenient access to music and information. Multimedia tools offer interactive music software and encourage the UoT music students to generate digital musical performances for sharing and publishing on the internet.

Video-sharing platforms like YouTube and Instagram function as virtual spaces for participatory culture. Well-known social networks such as Facebook are ideal for connecting music students who share common interests, thereby enhancing both class and ensemble learning experiences.

The concept of pedagogical syncretism introduced by Waldron (2013) describes the blending of user-generated resources and content with various learning modalities. A common example is an aural transcription of YouTube/digital video content into written notation for music teaching and learning (Waldron 2013).

## **5.2 Recommendations**

Empirical research conducted with jazz piano pedagogues at national and international higher education institutions provides valuable insight and perspectives on developing an online jazz piano programme. The use of notation software programs (Nart 2016), music learning applications, and subscription services (SmartMusic) in the classroom supplement online learning (Thibeault 2012). Incorporating cloud-based infrastructure as an educational tool (Bozalek & Ng'ambi 2015) with online music learning mobile applications and MOOCs for the South African music students' learning context encourages student online engagement. Embarking on a digital transformation in music education and performance classes involves shifting towards a digital-centric approach (Cayari 2015). This transition is facilitated by embracing participatory culture and informal music practices, specifically through the creation of videos and the establishment of culture-sharing communities, as advocated by Waldron (2013).

Another area for further study encompasses instructional design models and conceptual frameworks, particularly their relevance to South African higher education. The community of inquiry (CoI) framework, as proposed by Garrison et al. (2001), integrates social, cognitive, and teaching presence to shape the online

music teaching and learning experience. Additionally, Wenger's (1998) community of practice (CoP) model emphasises social learning through joint activities, support mechanisms, and interaction. Biasutti (2015b) emphasises the utilisation of technology for collaborative composition within virtual environments.

### **5.3 Limitations**

Although the lived experiences of both educators and students should be considered, online jazz piano learning at the higher education level is in its infancy stages. Hence, the primary basis for gaining knowledge and understanding is via the review of online jazz piano documents and related literature. Research shows numerous pedagogical benefits of online music learning. However, such programmes are dependent on the availability of technological infrastructure. The individualised nature of online music learning requires high-quality audio-visual and IT equipment. To be effective, online music learning programmes should align with and adapt to the students' technological background and available infrastructure.

### **5.4 Conclusion**

The development of an online jazz piano conceptual framework tailored for a UoT and the South African context represents a significant milestone in advancing music education in the digital age. By drawing on the rich tapestry of South African jazz elements, including repertoire, style, and performance practices, the proposed conceptual framework addresses the specific challenges faced by music students at UoTs and embraces the cultural diversity inherent in the South African musical landscape.

Through the integration of technology, guided by social constructivism and the TPACK model, the proposed framework for online jazz piano learning at a UoT has harnessed the power of synchronous and asynchronous learning methods, multimedia resources, and social media tools. This comprehensive blend of traditional and cutting-edge educational strategies ensures a well-rounded and immersive learning experience for UoT music students, fostering a deeper understanding and appreciation of jazz piano.

The adaptation of thematic musical elements, as outlined in the conceptual framework, enhances instruction methodology as it encapsulates a commitment

to preserving and promoting the unique heritage of South African jazz. By doing so, students are empowered to master the technical aspects of jazz piano and to connect with the cultural nuances embedded in the jazz repertoire they are learning.

The implementation of this conceptual framework for online jazz piano learning at a UoT will catalyse transformative learning experiences, transcending geographical boundaries, enriching the musical landscape of South Africa and nurturing the next generation of jazz pianists in the digital era.

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