Since each new incoming student would receive a laptop computer, the school directors of the Dutch secondary school where I work required that my fellow music teacher colleagues and I find and adapt curriculum for use by these new “laptop classes”. Feeling the need to incorporate such new pedagogy in a responsible and accountable educational framework I interpreted this top-down dictated requirement as my school’s manner of engaging in and adapting 21st Century Skills (21CS).

Exhaustive inquiry found a single obscure very small lesson addressing 21st Century Skills from the perspective of a music teacher. Further inquiry via the Dutch National Institute for Curricular Development (SLO) revealed their own 2014 study of the 21CS which found many shortcomings in teachers, schools, and available commercial methods in awareness, implementation and assessment of 21CS. A result of this SLO study is their own recommendations for Dutch secondary schools in 21CS curriculum implementation.

Addressing the question, “How can the SLO evaluations be used to build a 21CS music curriculum?” this thesis begins where the SLO study, "21st Century Skills in the Curriculum of Foundational Education" leaves off. In administering the findings and recommendations of the SLO from their study, this thesis uses literature, questionnaires, classroom observations, dialogues with teachers, testing of curricula, a 21CS curriculum building workshop and other 21CS research to offer perspectives and initial guidelines for music and art teachers who wish to incorporate 21CS into their lessons. The primary method of this research is to practically implement the specific SLO conclusions to remedy the shortcomings found in the SLO findings.

As a design research project, the work is divided into two components, the paper and the product of the paper. The paper contains the study and its findings. The product is a Curricular Guide for Implementing the 21CS into Music Curriculum, which is meant to use the findings of the paper to help the Dutch music teacher to implement and assess 21CS into their departments and classrooms.

Using this method, the study has been able to devise the Curricular Guide which serves to guide music and arts teachers toward incorporating the 21CS into their classrooms for use in helping student learning and achievement.

Keywords: 21st century skills, secondary education, music curriculum, digital age, information age, SLO, music education, Dutch education.

1 INTRODUCTION - WHY 21ST CENTURY SKILLS

I teach music and art at a Dutch secondary school just outside of Amsterdam. At the end of the last school year I was told by my team leader that I would receive a bit of extra pay in the coming summer to come up with some curriculum for the next year’s incoming students who would all begin the year with a school issued or school approved laptop computer. Already intuiting what researchers in 21st Century Skills refer to as, “throwing a computer at the problem”, I assumed that my team leader wanted me to come up, not with some random or semi appropriate computer programs for class use so that the school could justify the extra expense of the laptops to parents, but that I was expected to develop curriculum which the idea of the computer represented. Knowing the culture of my school and the state of the Western world’s and Dutch education, I took it upon myself to fit my team leader’s request into the larger stadium of preparation of the citizenry for the digital information age.

In short, wanting to responsibly fulfill the request of my team leader, I found that the appropriate framework, the “questions behind the question” so to speak of my task, fit squarely into the realm of the 21st Century Skills (21CS).

In scouring methods, internet sources, books and journal literature I found only one source that even acknowledges the 21CS for music education. There seem to be many offerings of help and example
21CS curriculum for other subjects. But comparatively nothing for music. Since so little documentation of 21CS curriculum existed for music from other origins, I decided to return to the source.

After the governmental agency, the Ministry of Education, Culture and Science, the leading organization of curriculum policy and administration in Dutch society is the Dutch National Institute for Curriculum Development, abbreviated in Dutch as SLO. In searching this basis source and advisory board of Dutch curricular standards, I still found no specific curricular advice, guidelines or examples of 21CS in music. I did however come upon the SLO’s own study as pertains to the 21CS. This study titled, *21st Century Skills in Foundational Education* is commissioned by the Ministry of Education, Culture and Science for the SLO to examine what the 21CS contain, and how much attention they receive, or should receive in the classroom.

The findings of SLO study, listed in detail below, are particularly telling as the SLO conclusions directly explain and replicate the lack of specified attention for the skills that my school and team leader were able to articulate, and these results further help to understand how and why there is so little 21CS focus for a music curriculum.

### 1.1 The SLO’s findings and conclusions

The SLO study was conducted in three phases with therein three sets of findings. In addition to several findings per phase, their study ends with a separate set of conclusions.

**Phase I**: In the first phase it was concluded that while there is international agreement as concerns the importance of the identified skills, that there is little known about; effective implementation of the skills, and about their achievable learning results. In this phase the SLO developed their conceptual framework version of the 21CS, as a short definition version of the skills for use in Dutch foundational education (see Figure 1).

**Phase II**: In the second phase it was concluded that although provided curricula leaves room for schools to accommodate for the 21CS as they see fit, that there are very few specific recommendations and stimulation to actually and concretely fulfill the 21CS. The SLO found that core goals and guiding reference levels rarely mention the 21CS, and that the normal methods contain very little 21CS substantially and systematically implemented. Their findings further listed that the skills of creativity and problem solving received the least attention.

**Phase III**: The study’s third phase used questionnaires and case studies to survey several teachers throughout the country to try to understand how they incorporate the 21CS into their daily lessons. The responses show that teachers are generally aware of the 21CS and that they find it important to give them attention. Some teachers report that the skills receive regular attention in their lessons, but the case studies state that this attention for the most part is neither sufficiently targeted nor structurally implemented. There is intent to observe the 21CS but the development of lesson activities to fully bring to fruition the goals of the skills proves to be more complex than teachers realize. In particular the skills of critical thinking and problem solving are difficult for teachers, but the study states that no schools give attention to all of the skills to their full extent. Most teachers feel that they are not well enough trained and equipped to realize the skills in their lessons. Teachers need more reliable guidance, training, lesson materials and good practice examples.

**Conclusion**: It is concluded that the 21CS are neither focused and targeted, nor structurally implemented in primary and secondary Dutch lessons. The study further goes on to say that given the importance of the 21CS for students and the limited attention that they receive, it is desirable to strengthen the position of the skills in the curriculum. Finally, the study concludes that the following support is needed in order to stimulate teachers:

- **Curricular development**: the skills need to be taken from the conceptual realm and made concrete in the form of example materials.
- **Assessment**: the development of practical instruments and frameworks to monitor and assess students.
- **Professional development**: an abundant offering of trainings and networking from the school for the sharing of knowledge and information.
- **Educational tools**: more attention for the 21CS in methods and wider interconnection with additional teacher aides.
Table 1. The SLO findings and conclusions listed.

<table>
<thead>
<tr>
<th>Findings from the SLO Study</th>
<th>Conclusions from the SLO Study</th>
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<tbody>
<tr>
<td>1 There is little known about effective implementation of the skills, and about their achievable results.</td>
<td>1 It is desirable to strengthen the position of the skills in the curriculum.</td>
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<tr>
<td>2 There are very few specific recommendations and stimulation to concretely fulfill the 21CS.</td>
<td>2 curricular development - The skills need to be made concrete in the form of example materials.</td>
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<tr>
<td>3 Core goals and guiding reference levels rarely mention the 21CS.</td>
<td>3 assessment - Teachers need assistance in the development of practical instruments and frameworks to monitor and assess students in the skills.</td>
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<tr>
<td>6 The attention that teachers give to the skills is neither sufficiently targeted, nor structurally implemented.</td>
<td>6 21CS should be explicitly taken as a theme in the reassessment and recalibration of the curriculum.</td>
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<td>7 Development of lesson activities to fully bring to fruition the goals of the skills proves to to be complex for teachers.</td>
<td>7 If curriculum reassessment leads to revaluation of the core learning objectives, then the skills should be specifically named and be made explicit in the core learning objectives of the different learning domains.</td>
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<td>8 The skills of critical thinking and problem solving are difficult for teachers to realize in lessons.</td>
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<td>9 No schools give attention to all of the skills to their full extent.</td>
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<td>10 Most teachers feel that they are not well enough trained and equipped to realize the skills in their lessons, and need more reliable guidance, training, lesson materials and good practice examples.</td>
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2 21CS MUSIC CURRICULUM - METHOD AND TERMINOLOGY

While the SLO study is not specifically related to music and art lessons, the goal of this 21CS Music Curriculum thesis is specifically to use those findings to help music and art teachers to build their own workable 21CS curriculum which addresses the SLO’s evaluations. The simple practical research question is:

How can the evaluations of the the SLO’s 21CS in Foundational Education study be used to guide the making of a 21CS music curriculum?

To answer this question, a few subquestions are helpfully necessary.

1 What are the SLO evaluations?
2 What exactly are the 21st century skills?
3 What kind of interventions can aid teachers toward incorporating 21CS into their lessons?
4 What can the SLO evaluations mean specifically for music education, and how can the evaluations be translated into music?
The first subquestion is already answered above and these SLO evaluations are listed for clarity and ease of reference in Table 1. The point specifically is to use those evaluations to guide the making of an appropriate and accountable 21st century skills music and arts curriculum. To this end an important methodic technique is to use the Table 1 conclusions (column 2) since these contain the final recommendations and resolutions of their study, to remedy the shortcomings which they present in their findings (Table 1 column 1). Another way to express this is to say that this thesis seeks to follow the conclusions of the SLO study, to mitigate the deficiencies in their findings, as the study is meant to do. The extra task is to, as the fourth sub-question above states, translate these evaluations to guide music teachers who wish to incorporate 21CS.

This is a practical study involving practice based evidence which uses literature, consultations with fellow music and art teachers, case studies and lesson observations in an effort to directly confront and reply to the Table 1 listings. The initial scope and target group is within my own immediate working environment of the Hermann Wesselink College (HWC), but some testings, surveys, consultations and especially the literature reach outside of the immediate art and music department.

The entire thesis is a design research project in two parts. The first part is this main thesis which asks, deliberates and practically interprets the research question for a regular classroom or department in foundational education. Herein analysis of the literature, dialogues and work with teachers and students is used to see if indeed the findings of the SLO study can be practically instituted toward guiding a working and accountable 21CS music curriculum.

The second part of this design research study is a guide for Dutch secondary school music teachers titled, “A Curricular Guide to Incorporating the 21CS in Music Lessons” (Curricular Guide, to be found at http://denniswthompsonii.com/21CenturySkillsMusic.html). This document uses the findings from the thesis to provide teachers with structural and targeted guidelines to making their own 21CS lessons and curriculum.

### 2.1 Terminology

Since this study takes place specifically in the context of Dutch education, although written in English, the terminology and concepts used are those of contemporary pedagogical practice in Dutch secondary education. Some of these terms and concepts are foreign to English, or expressed differently than is normally done in English. For this reason, if necessary definitions will first list the Dutch term which they are clarifying.

**Collective ambition** - a summary of how leaders and employees think about why they exist, what they hope to accomplish, how they will collaborate to achieve their ambition, and how their brand promise aligns with their core values. These companies don’t fall into the trap of pursuing a single ambition, such as profits; instead, their employees collaborate to shape a collective ambition that supersedes individual goals and takes into account the key elements required to achieve and sustain excellence (Macomber, 2017).

**Conative skills** - the ability to analyze situations and the following steps that are necessary to take in those situations.

**Core goals** - Dutch *kerndoelen*. The main objectives of a lesson.

**Extramusical** - Concepts such as 21CS which, although they may occur in the music lesson, they may not specifically help with musical production. They may help with ancillary concepts such as focus or communication.

**Foundational education** - K-12. The combination of primary and secondary school, elementary and middle and high school.

**Guiding reference levels** - Dutch *referentieniveau*. Benchmarks. The level that students should attain in their respective grade, “grade level” or at a particular stage of cognitive development such as in the SLO prescribed *learning lines*.

**Intramusical** - Concepts such 21CS which help the musical, artistic production.

**Learning lines** - Dutch *leerlijnen*. A convention used in Dutch education and by the SLO to illustrate specific examples of intended student reference levels. A reasoned construction of content and that contents’ intermediate goals which are directed toward final goals.
Onderbouw po - the lower levels of Dutch elementary school. This term is most notably used here in the SLO learning lines as being the learning line reference levels for phase I.

Onderbouw vo - the lower grades in Dutch secondary schools. Roughly kin to American middle school or junior high school.

PO - Dutch Primary Onderwijs. Elementary school.

VO - Voortgezet Onderwijs, upper levels of Dutch secondary education.

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3 POINTS OF ANALYSIS

Lack of resources or impetus to learn the skills leads to cursory knowledge

In an effort to answer the thesis question of how to use the SLO 21CS Foundational Education study to guide the making of a 21CS music curriculum the method of using the SLO conclusions to mitigate the shortcomings of the findings was set into motion. The begin situation of the music and art teachers at the Hermann Wesselink College was found to be comparable to the SLO evaluations. In other words, what the SLO found to be true, specifically findings 1 - 4 were all also true (as concluded via discussions and surveys) at the HWC. More importantly the initial survey of the begin situation and further test iterations proved finding 6, that the attention which teachers give to the skills is not purposefully implemented, was proven to be true. That this point is true seems to be at the heart of the problem. Discussions with teachers and observations of classes and lessons has shown that teachers assume a knowledge of the skills rather than actually having a definitive knowledge of them. The 21CS remain too much of a new educational buzzword rather than being encouraging of actual awareness and expertise of a new pedagogical tool. The reasons for this are just as the SLO themselves already state in their findings 1- 4. The currently available methods don’t mention the 21CS, core goals and guiding reference levels don’t mention the skills, there is little stimulation or recommendations to learn or utilize the skills, . . . from where exactly can working teachers learn the 21CS?! Despite this incredible lack of resources and stimulation, those teachers who do know something about the skills are confronted with the finding 7, that actually using the skills is complex. This situation leads to contemporary teachers only having a cursory knowledge, as opposed to a specific and thereby useful comprehension of the skills.

The fact that there are so many versions of the skills is also not helpful. A look online turns up countless pages, all with cross referencing links to the variety of versions of the skills to be found on other pages. The skills themselves are too varied and complex to grasp without in-depth committed, and potentially time consuming study.

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Figure 1. The SLO’s graphic representing the 21CS as conceived for Dutch foundational education
To combat this the SLO has made their own conceptual framework (cf) version of the skills, followed by more meticulous descriptions in the learning lines. I find the SLO cf to be a truly helpful document and it is as complete and to the point as any description of the skills that I have found. I would highly recommend that the SLO, and since they are a non-profit, perhaps with backing from the Dutch Ministry of Education, Culture and Science who commissioned the 21CS Foundational Education study, that these bodies more actively promote and make the skills visible in Dutch pedagogical discourse and beyond. While the SLO aims at enabling local staff to perform curricular development as this thesis does, in support of such local staff, more materials and stimulation should be provided. Free posters, pamphlets, workshops... In short despite substantial improvements that I have witnessed to their site in the course of this study, I recommend that the SLO commit more to their conviction in the skills by offering the support which is not found as stated their findings.

This thesis provides help in its product the Curricular Guide to giving music teachers a definitive grasp, as opposed to a cursorily gleaned vague understanding of the skills. The Curricular Guide itself is also a formidable document of many pages, but as a reference guide it brings all of the information necessary into one document, saving the user significant time in searching and studying.

**Interpretation principle - a paradigm shift**

The 21st century skills are not a collection of content, but rather a complex set of guidelines which are built into some generally agreed upon terminology. Where one model of the skills speaks in terms of creativity, another reference the same concept as innovation. Presumably the Dutch Ministry of Education sought to resolve this confusion by commissioning the SLO to define the skills themselves. But the interpretational room within those 11 defined SLO skills is still wide.

Discussions comparing the skills to the most common activities in the classroom (see Curricular Guide section 4.a p19) display further the interpretative quality of the skills. While I found computational thinking to not correlate to playing music together, a colleague pointed out that the programming of items such as loop machines and d.j. music programs and the like involve some form of computational thinking. How individual teachers decipher the skills can vary substantially.

It is less important that the skills can be interpreted differently. What is important is:

1. that departments discuss and have some understanding together of how they comprehend and may use the skills
2. that teachers continue to use the skills to further develop their understanding.

By discussing the skills teachers help to educate and inform each other about their mutual perception and usage of the skills in the classroom.

That the skills are so widely interpretable adds to how complex they are for teachers to have to learn and be able to use. As opposed to content, these new parameters of assessment suggest a significant shift in how teachers work. Such a shift unfortunately requires investment of time and energy for one to feel comfortable before they can really use the skills. Although this thesis persisted via subquestion 3 in finding ways to make it easiest for teachers to come to terms with the skills, the complexity and sheer volume of eleven difficult to succinctly define skills remains an arduous undertaking that requires significant commitment.

**BOHICA modus and Weggeman’s list of theories**

Unfortunately teachers are weary of new learning techniques. Conversations with colleagues confirmed that having to spend time with yet another learning theory was not the most welcome of proposals. Too often these new learning theories are force fed to teachers from the top down and then weeks later they are forgotten. At the HWC over the years we have had conferences on Gardner’s Multiple Intelligence Theory, RTTI and Carol Dweck’s Growth Mindset amongst many other less prominent conference topics. While these theories have proven to be quite useful, the way that they are top down forced and then forgotten tends to leave a bad taste in the mouth. Mathieu Weggeman refers to the construct of how managers make results required, which in this case refers to we teachers being required to sit through hours of trainings, as being in conflict with the effort obligation that teachers must commit to such results requirements (Weggeman, 2007 p19-20). It is experienced as disingenuous to require so many hours of study and effort for something that one may or may not use, while teachers, always at a

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shortage of time, constantly feel the pressure to be getting other very necessary tasks accomplished such as planning the next lesson series and grading the last batch of tests. This sentiment was expressed in beginning conversations about the skills, and throughout this study, up until the workshop.

Weggeman explains that when professionals are confronted with the latest new managerial demand, that it is often easiest just to play along until the ordeal is finished. This is the modus that teachers employ (as evidenced via shared conversations and expressed during our workshop), when yet another new educational theory is forced upon us. The lewd acronym BOHICA is the official term which Weggeman applies. It stands for, “Bend Over, Here It Comes Again”.

I am not a manager nor am I a part of the school direction and I could not force my colleagues to learn or be engaged in discovering the 21CS and their usefulness with me. But colleagues did express on a few occasions this BOHICA modus when asked to participate in the study. I cannot take it personally because I feel and intimately understand the perspective. This is another reason for subquestion number 3, whose intent is in part to make the learning of the skills as least difficult as is possible.

In order to get teachers to earnestly give their time and energy to investing in the 21CS, all of the SLO conclusions should be followed, and still that is not enough. Further into Weggemans’ ideas would include that shared values would have to be developed to strengthen and ensure the collective ambition of teachers if they are expected to learn a new skill (Weggeman, 2007, p31). But lack of time and the lack of feeling a need to learn yet another, and in this case rather complicated set of pedagogical skills, doesn’t nourish my colleagues collective ambition to engage in learning the skills.

Another highly applicable explanatory managerial idea presented by Weggeman is the Law of Pareto (Weggeman, 2007 p27). This law, otherwise known as the 80/20 rule states that for many events, the efforts of 20% are responsible for 80% of the effects. In this case, I, one of five music teachers in the department and my pushing my colleagues and this work has accounted for 80% of this new development into our foray toward the 21CS.

To conclude, there seems to be no easy answer to combatting the BOHICA modus. Weggeman’s assertions explain that teachers lack time and the collective ambition to go along with proposals which conflict with the effort obligation that they must commit. A still more pessimistic but a most accurate answer to this difficulty is perhaps best expressed in an article by Benjamin Herold. In the article, “Why Ed Tech is Not Transforming How Teachers Teach” Herold presents evidence from many studies as to why teachers don’t incorporate technology into their classrooms. But a most telling statement, supported by real world examples is his article sentence, “Perhaps the most obvious—and overlooked—barrier to effective ed-tech use is that totally changing the way you do your job takes a ton of time and work.” (Herold, 2019). This statement serves to explain the dilemma that teachers face when presented with entirely new ways of working as the 21CS threaten. Teachers perceive that it requires too much time and work commitment which is dictated from above by a detached management.

Time is difficult

The above analysis mentions time as a hindering factor for teachers. In speaking with my colleagues and in reaching out to teachers on the Facebook forum “Toffe Songs VO en Meer”, almost all teachers mentioned that time was a pressing factor in their ability to engage in helping explore the possibilities of the 21CS for this study. Teachers feel constantly under pressure and learning to use the skills involves a time commitment. An individual or department wanting to increase the efficacy and sustainable up to datedness of their program via the 21CS will have to succumb to a realistic level of time commitment.

Pioneer principle

The 21CS are still a new phenomena. The rules and norms are far from being established and because of the highly interpretive nature of the skills, the standard idea of norms itself may perhaps never exist. We are still in a pioneering phase in the usage of the skills. As SLO finding number 1 states, there is little known about effective implementation of the skills or about their achievable results. We now in these early days are the experimenters. No one is an authority so it is hard to know what is right and what is wrong. This is yet another perhaps unclear aspect of the skills which make them difficult to define and accept by teachers. Any persons wishing to implement the skills must find a way to understand and deal with the uncertainty which this principle suggests.

This study’s Curriculum Guide with its case studies and example lessons makes an early attempt at deriving some kind clarity as to how the skills may be implemented, and the Guide purports to help music teachers to incorporate the skills. But only users themselves by implementing and trying the skills can judge by their lesson outcomes how valuable the implementations of the skills may be.
4 RESULTS

This thesis set about to answer the question how can the evaluations from the SLO study on 21st century skills in foundational education be used to guide the making of a 21CS music curriculum.

Along the way, subquestion one was to clearly describe what those SLO evaluations are and what they entail. Following, in answer to subquestion 1, is the research concerning each of the SLO findings.

SLO finding 1

A conclusive reply to finding 1 cannot be made. It is not possible within the scope of this paper to decipher what effective implementation of the skills are, and also thus not what achievable results are. One case study performed did allude to possible effective implementation of the skills and some possible results. But this paper has invented the pioneer principle in relation to the 21CS which says that since the skills are still so new, there is still no governing body, at least not yet in the subject of music to authoritatively say what concrete effective implementation of the skills are. Further, this paper’s interpretation principle posits that because of the highly interpretative nature of the skills, that unlike content knowledge which is absolute and fixed, these skills can be fluidly interpretable from person to person. “Effective” implementation and achievable results, depending upon the case of course, may always entail some levels of subjectivity.

For music teachers this thesis product, the Curriculum Guide makes an attempt at some implementation techniques by using SLO conclusions 1, 2, 3, and 4 in providing structural ways to implement the skills, strengthening them in the music curriculum by giving concrete example lessons and assessment frameworks. It remains to be seen how effective they may be.

SLO finding 2

For SLO finding 2, there remain few recommendations and stimulation from schools to concretely fulfill the 21CS. One recommendation from this study is that the Dutch Ministry of Education and the SLO themselves partner to better stimulate fulfillment of the skills. They could sponsor poster making contests in the schools, offer financial and prize incentives, give workshops, publish and distribute brochures about the skills, make a Facebook forum, hold creativity contests and festivals, critical thinking debates, computational thinking programming contests and symposia, . . . the list of what could be done to themselves take a greater role in stimulating the fulfillment of the goals in significant.

Another possibility is that the SLO push more to facilitate that schools themselves provide more stimulus. More accessible literature could be a start. To date the SLO distributes their information about the skills only on their website. While their site has recently been majorly improved, it still falls short in distributing the information outside of its own digital space.

SLO finding 3

Core goals and guiding reference levels rarely mention the skills. The core goals for music are made by the Dutch Ministry of Education, Culture and Science. Since they sponsored the SLO’s 21CS Foundational Education study they could heed the words of their own study and update their core goals for art and culture to mention the 21st century skills.

SLO finding 4

That the normal methods for music in the Netherlands contain very little 21CS still holds true. I did have the opportunity to speak with Joost Overmaars, author of the popular Dutch music method, Intro and he states that he doesn’t use the term 21st century skills, but that his newest edition strives to meet the individual manners that students learn music by way of “metacognitive skills”. I am not sure that this is the same as 21CS, but the SLO does say in their conclusion 6 that methods should have more attention for the skills and other conclusions mention “specific naming” of the skills. I haven’t been able to peruse Joost’s newest edition of Intro, but my analysis proposes that throwing an entirely different term into the mix of the so many interpretations of the skills that are already in existence may only add confusion and further complexity to their usage.

And this is speaking of the newest edition of Mr. Overmaar’s secondary school music method. That is to say that this newer edition is not yet off the presses. This seems to be the problem with traditional printed methods. They too are victims as Marzano & Heflebower’s Kay quote states of not being able to keep up with the fast pace of digital existence (Marzano, R. J., & Heflebower, T.,2012 p. 16). Printed methods are renewed every three four, even five years, in which time a world of change can occur. The result is that, dissatisfied with the too often out of date offerings of the printed methods, more music
teachers are developing their own lesson material. This is true of my music department, and of my colleagues at the CSB Amsterdam. I further posed the question on the Facebook Dutch secondary music teacher forum, “Toffe Songs VO en Meer” and one music teacher conservatory student in Groningen revealed that her program encourages the students to make their own methods precisely because the methods aren’t able to keep up to date. She continued to tell that in the internships that she has done in schools, none of the schools use methods. Traditional printed methods, like other print media is having difficulty surviving in the changing digital environment.

SLO finding 5

Music as a subject is particularly apt for teaching the skills of creativity and problem solving. The Curricular Guide offers example lessons in these skills, and pages 29 and 34 explain how media wisdom are implicated in the typical music classroom activities of playing music and singing.

SLO findings 6 and 7

The Curricular Guide makes an attempt at guiding teachers to structurally implement the skills in a targeted manner by offering example lessons. Nonetheless teachers will have to realize that a time investment is necessary for true comprehension of 21CS concepts. The Curricular Guide eases the complexity of the skills by initially only offering lessons which only focus on one or two skills at a time.

SLO finding 8

The Curricular Guide and 21CS Music Lessons webpage (http://denniswthompsonii.com/21CenturySkillsMusicLessons.html) offers entry level conceptual framework level critical thinking and problem solving lessons as well as more complex examples. These examples are designed to aid the teacher toward realizing the skill incorporation into their own lesson ideas. But again, true faculty in implementing the lessons will require some level of commitment, studying and practicing of trying out the skills oneself.

SLO finding 9

While the SLO states that no schools give attention to all of the skills, a future goal of the 21CS Music Lessons webpage (http://denniswthompsonii.com/21CenturySkillsMusicLessons.html) is indeed to have full practical lesson ideas and and examples for every skill. Again, we are the pioneers and the field of 21CS lessons is still very new terrain.

SLO finding 10

The Curricular Guide attempts to offer some training, reliable guidance, lesson materials and good practice examples of the skills. The 21CS Music Lesson webpage also offers a growing selection of lesson material and good practice examples. In addition via the Curricular Guide I also offer my own services to give workshops in the 21CS (in English, French or Spanish: mail to nerien@yahoo.com).

Subquestion 2

The second subquestion asks what are the 21st century skills. The SLO has developed what I find to be a very good conceptual framework description of the skills. I think that they should distribute their version of the skills worldwide because they are clear and concise and make logical sense. They are comparable and subjectively even better than most other versions that I have studied for this thesis. This said, the teacher, even teachers in the Netherlands, should make themselves somewhat familiar with the skills from other sources. Because the skills lend themselves so well to individual interpretation, knowledge of other versions of the skills can help to influence one’s power of interpretation and overall understanding of the underlying concepts to the skills. For example an Australian model describing conative skills may be more to your liking and personal convictions than the SLO model’s interpretation.

Subquestion 3

The initial plan used to try to aid teachers to learn and incorporate the skills was to follow the SLO conclusions to the letter by first incorporating the skills in a targeted fashion (conclusion 1) and thereby strengthening the position of the skills in music curriculum (conclusion 2) by providing example materials (conclusion 3) and assessment aids (conclusion 4). But when I came to an impasse it was necessary to go back to basics and hold a workshop that went back to the beginning of what the skills are and why. This step proved to be the turning point, but for added measure the example lessons were shortened considerably for ease of use. Results of this step can be considered to be positive as colleagues themselves later submitted their own similar short description 21CS lesson materials.
Subquestion 4

This question about what the SLO evaluations can mean specifically for music and art education and how these can be translated to music has primarily been answered in the Curricular Guide. The Curricular Guide directly translates the SLO cf and learning lines into musical representations of how the skills can be used in this subject. A particularly important step in translating the skills into musical permutations is the cross referencing exercise in the Curricular Guide section 5, page 25. Through this process and discussion, departments state aloud and share their different and similar interpretations of the skills and how strongly or weakly they correlate to the activity being discussed. This exercise was also done for drama in our workshop, and can really be done as such for any class subject. The further sharing of personal thoughts as I listed in sections 5c and 5d of the Curricular Guide illustrate how one version translating the skills to musical activities may work.

The assessment examples in the two learning line lesson examples of section 7a and 7b also show how the SLO findings have meaning for and can thus be translated into cases for use in music classrooms.

To finalize, the SLO 21CS in Foundational Education study CAN be used to guide the making of 21CS music curriculum by using the conclusions to fulfill the findings as the initial hypothesis implies. But in these still early days of the skills it is important be sure that participants in the process all actually comprehend a generally agreed upon perception of the skills. Further the persons need a guide to take them through the steps of using the conclusions to fulfill the findings. This thesis Curricular Guide does just that. (http://denniswthompsonii.com/21CenturySkillsMusic.html)

ACKNOWLEDGEMENTS

I would like to acknowledge the help of my advisor, Mr. Guus Koemans from the University of the Arts in Utrecht and Dr. Olga Sezneva from the University of Amsterdam for their help, encouragement and support throughout this study.

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