TEACHER EDUCATION & DEVELOPMENT | REVIEW ARTICLE

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cogent education

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Improvisation in teaching and education—roots and applications

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Abstract: The main aim of this review article is to understand and discuss the concept of improvisation as a professional skill for teacher educators. The literature review suggests that five academic traditions are especially relevant to examine: Rhetoric, music, theatre/drama, organizational theory and education. The dialogic, open-scripted, interactive and responsive aspects of improvisation are common features for all the traditions we have examined and could provide a common basis for improvisation as a key curricular concept in teaching, and hence teacher education. Every day teachers are challenged to act in accordance with the situational needs and requirements arising in different pedagogical situations. We have identified four different aspects of improvisation, which appear to be of crucial importance in any discussion about improvisation as a key concept in education: (1) *Communication and dialogues:* Communication in improvisation can be described along a continuum of two positions: From the *internal* process of communication itself to the *external* intended result of it. The purpose can also vary from emphasizing the effect on the audience to emphasizing the process of exploration. (2) *Structure and design:* All traditions claim that to be a good professional improviser, you have to be aware of and be skilled in planning and structural thinking. (3) *Repertoire:* Learnable

ABOUT THE AUTHORS

The authors are all members of the project group for the IMTE-project. This project aims to investigate and develop what could be described as the dynamics of teacher education, conceived of as processes and interactions involved in flexible and improvisational knowledge construction as part of teacher education. The main research focus is the overarching concept of improvisation, connected to the student teachers' spontaneous as well as prepared handling of (1) pedagogic and pedagogic content knowledge in and across teaching practices and in interactions with pupils; (2) examples of contents, activation forms and artefacts in and across practices and interactions with pupils; (3) formative assessment and the corresponding reflective practices of students, practicum teachers.

The authors are all teacher educators within the disciplinary fields of mother tongue, music, drama, pedagogy and ICT in learning.

PUBLIC INTEREST STATEMENT

Every day teachers are challenged to act in response to student's needs and questions and what takes place in classrooms. They need to improvise their teaching. However, is this something teachers are trained to deal with during their teacher education?

The main aim of this review article is to discuss the concept of improvisation as a professional skill for teaching and teacher educators. We have identified four different aspects of improvisation of crucial importance in any discussion about improvisation as a key curricular concept in education: (1) *Communication and dialogues:* Communication in improvisation is both about dialoguing and corresponding learning outcomes. (2) *Structure and design:* Productive improvisation in teaching needs to be embedded in flexible design and structures. (3) *Repertoire:* Learnable repertoires, subject knowledge and knowledge about learning and good teaching, are underlying prerequisites for improvisation. (4) *Context:* Improvisational practices are context dependent and domain specific to a great extent.

repertoires, shaped by content knowledge and pedagogical content knowledge, are an underlying prerequisite for improvisation in education. (4) *Context:* Professional improvisational practices are context dependent and domain specific to a great extent.

Subjects: Education Studies; Educational Research; Study of Higher Education

Keywords: improvisation; dialogue; structure; repertoire; teaching; teacher education

1. Vignette

> In a practicum 9th-grade classroom a student teacher is teaching mathematics with her peers and teacher observing. Her topic is quadrilaterals, and as a beginning she asks some pupils to draw different quadrilaterals on the blackboard. The first pupil draws an equilateral quadrilateral, the second a rectangle, and they are praised for their contributions. The third pupil arrives at the blackboard, and, seemingly confident, he draws a figure with four vertices and two straight and two curved sides. This leaves the student teacher a little bewildered and speechless; she looks to her fellow teacher students for help.

The situation described in the vignette above was observed in a pilot study in our ongoing research project *Improvisation in Teacher Education* (IMTE) at Stord/Haugesund University College (SHUC). It serves as an empirical point of reference of our research focus: To study and develop improvisation as an important part of teaching and education. The contribution from the third ninth grader at the blackboard was unexpected and not foreseen, and the student teacher had to come up with a response there and then. She had to improvise. An experienced practicum teacher would most likely identify the episode described above as a "golden moment", one to explore the potential for pupil learning in the situation, to deliberate what characterizes a quadrilateral and discuss this with the pupil and the class. An experienced teacher would also know that these situations often take place in a classroom. The inexperienced pre-service student teacher may, however, be taken by surprise, as in this example, and fail to use the golden moment.

2. The review as a comparative inquiry

The immediate background for this review article is a literature review on the use and theory of improvisation in different fields, including teaching and teacher education, the field in which the authors of this article work. An open literature research on the concept of improvisation and related search words resulted in findings in a number of academic and professional fields. However, a first inspection of review results suggested that findings in five different fields or traditions seemed especially relevant to our review questions: Rhetorical tradition, music tradition, theatre/drama tradition, organizational theory tradition and the tradition of education.

Literature review findings in three of the traditions—rhetoric, music and theatre—tend to describe improvisation as processes and products of verbal or non-verbal expressions, compositions and collaborations, whereas the two others—organizational theory and education—tend to treat improvisation as a way of working in professions, such as the professions of leadership and teaching.

This review article examines the concept of improvisation from two perspectives: First, we account for findings in the traditions of rhetoric, music and theatre referring to these findings as "roots" of improvisation in professions. Then we focus on findings in our own field––education––with a side view to findings in the field of organizational theory, referring to these findings as "applications" of improvisational theory and practice in education. As such, therefore, our review is comparative, researching and comparing the use and understanding of the phenomenon of improvisation across widely different academic fields and traditions. However, the borderline between traditions here described as "roots" and fields described as "applications" are by no means clear-cut. In music for example, there is a vast literature on the *teaching* of improvisation. In theatre, the corresponding field in education is drama, and drama in education will therefore be dealt with when we discuss applications of improvisation.

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In the following, we discuss our findings in order to answer the following review research questions: What are the essential characteristics of the practices and theory of improvisation in different traditions? In what ways are these characteristics comparable or even generic, and how can different practices and theories of improvisation contribute meaningfully to our understanding and description of professional improvisation in teaching and education?

3. Method

The main aim of this review is to establish a common platform for understanding of the concept improvisation as a professional skill in teaching and teacher education for researchers conducting research in and on their own teaching contexts. Early in the review phase we had to define and limit the search field, to decide what kind of sources and key words should be included in the search, and to decide what time period the search should include. We started with an open search on the concepts of "improvisation" and "improvisation in/and teacher education" in international literature (Montuori, 2005). We found the concept of improvisation used particularly often in music, theatre/drama, organizational theory and in educational theory. We also chose to include our findings in the field of rhetoric because we consider this field highly relevant to teaching and education. Rhetoric constitutes one starting point of theorizing on the concept of improvisation in our cultural sphere, and findings from rhetoric theory are, to a large extent, also found in later descriptions of improvisation (von Walter et al., 1998, p. 307).

The review was conducted as a collaborative task in the project review group, aiming at giving an overview of and also constructing an interpretation of the field (Montuori, 2005, p. 375). The project group developed a schema with key search words, type of literature to be searched (articles, books and national steering documents for teacher education), links with references to article findings, abstracts and comments from each member of the review group. Several databases and search engines were used: Academic Search Premier, ERIC, Google Scholar, JSTOR, Norart, Idunn, DOAJ, Bibsys, Google, Oria, Brage. The articles and books are registered in a review folder in RefWorks[1] with access for all review researchers.

4. Findings

4.1. Roots of improvisation

In the first part of the findings section we present and discuss results guided by our first review question: What are the essential characteristics of the practices and theory of improvisation in different fields? To answer this question, we chose to first describe findings in each of the three traditions of rhetoric, music and theatre.

The Latin root of the word improvisation is "improvisus", which means "the unforeseen" (Montuori, 2003, p. 240). In daily use, improvisation often takes place and is understood as an intuitive, spontaneous and responsive activity, sometimes to make the best of things when plans fail or something unforeseen happens.

There are some basic differences between the three traditions of rhetoric, music and theatre. Rhetoric is initially a linguistic theory on oral language used in official contexts, and the rhetorical notion of improvisation represents the origin of theory on the concept (von Walter et al., 1998, p. 308). Music and theatre offer different theories on performance or ways of expressing something artistic. The notion of professional improvisation developed in music and theatre is very often a description of improvisation as a part of an artistic performance or as an aesthetical means of expression. The three root traditions in question here are all complex and rich, and they are historically, contextually and culturally founded.

4.1.1. Improvisation in oral speech: The concept of improvisation in rhetoric theory

The theory of rhetoric has had a large impact on modern pedagogical theory, being the dominant theory on education up till the seventeenth century (Andersen, 1995, p. 272; Johannesen, 2004, p. 10).

Rhetorical theory deals with general educational themes that we in modern language call the basic competencies of reading, writing and speech. In antiquity, improvisation was a core concept of rhetoric, but this concept has, for different reasons, lost its importance in rhetorical theory in our time. A main reason is the fact that the focus on orality has become less important since the eighteenth century (Holcomb, 2001, p. 55).

The notion of improvisation as a complex virtuous skill has been a part of the theory of performing in rhetoric from the Greek rhetoricians' time (von Walter et al., 1998, p. 308). According to rhetoric theory, improvisation required a broad knowledge base that also included the understanding of how to improvise in a rhetorical situation. Andrew Haas points out that the Greek word for improvisation used by Aristotle, *autoshedíos*, means acting in general (Haas, 2015, p. 115). Haas suggests that Aristotle developed his theory on tragedy and comedy by describing different ways to act improvisationally.

In *Institutio Oratoria*, Quintilian (35–95 AD.) states that improvisation is "the greatest fruit of our studies, the richest harvest of our long labors" (Quintilianus & Russell, 2001, p. 373). In his chapter on improvisation, Book 10.7, Quintilian starts by pointing out that there are two different kinds of improvisation—the *artless* and the *artful*. Individuals conducting artless improvisation rely solely on their ingenuity. According to Quintilian, artless improvisers are individuals who have a natural talent for oral performance but who do not spend time on studies and who don't make scripts or plan a structure for their speech. Individuals conducting *artful* improvisation will, on the other hand, be skilled in the subject they are speaking about in addition to having a natural talent and being educated in the art of speaking (Holcomb, 2001, p. 57 ff). Improvisation is artful when it is conducted by a person who has knowledge of the subject that he is speaking about and of the many linguistic means he can use. He is supposed to have a planned structure and a script. An important part of the theory of rhetoric is the acquisition of a repertoire; in rhetorical theory this is called *copia* (Holcomb, 2001, p. 61). Quintilian underlines that preparation is all important. The orator should not read from a prewritten paper, but speak freely, with or without notes. An orator who foregoes general preparations will impair his ability to improvise (Holcomb, 2001, p. 62). Quintilian writes about the different situations when improvisation is required. First is in the case of mishaps. This is when the orator is forced to change his speech for different reasons in the course of speaking. In these cases, the skill of artful improvisation is most needed. Second is when the orator is examining a witness in a trial. In this dialogue, it is impossible for the orator to foresee what the witness will answer, and so the ability to improvise in the dialogue is very important. The third case is in the case of what Quintilian calls "happy incidents". Happy incidents are, according to Quintilian, moments during a prepared speech when the speaker suddenly gets new insight (Holcomb, 2001, p. 66).

To sum up, rhetoric distinguishes between artful and artless improvisation, it places improvisation in a performance with a planned structure and script, or in a dialogue, and emphasizes that the intention of the speech is determined from the context and the situation.

4.1.2. The concept of improvisation in music

We find improvisational practices within most musical genres. Improvisation is often seen as a form of global or cross-cultural means of musical expression (Bailey, 1993, p. 48; Bakkum, 2015). One of the authors who has made a significant contribution to the field of jazz improvisation is Paul Berliner. In his book *Thinking in Jazz: The Infinite Art of Improvisation* (Berliner, 1994), he gives a thorough description of various aspects of jazz improvisation. He claims that jazz improvisation is collective as well as individual; other theorists on jazz improvisation also underline that communication in a jazz group is a constant negotiation among the musicians playing together. According to Alterhaug (2004, p. 15), good quality communication in improvisation takes place in an atmosphere of trust and freedom, and "gives joy, releases energy, and activates knowledge and reflection". Improvisation can be seen "as a kind of creative musical conversation" that takes place both on an inner level in dialogue with the music and between musicians (Wigestrand, 2006, p. 119). The quality of the conversation depends on whether the individuals involved have a common understanding of the

contents and direction of the improvisational activity. In a conversation, one must give each other space to improvise, at the same time as the musicians have a joint responsibility to take initiative and bring the improvisation further into new and unfamiliar directions (Alterhaug, 2004, p. 111). Alterhaug argues that this negotiation can be seen as a structure where leadership is shared.

Seddon (2005, pp. 52–53) describes three different ways of communication in improvisation, where each mode can be both verbal and non-verbal, for instance by using musical material, body language, musical cues or eye contact in the communicational process. Seddon uses the terms "attunement", "decentring" and "introspection" as central for communication in an improvisatory jazz ensemble, and relates these concepts to the concepts of "sympathy" and "empathy". According to Seddon (2005, p. 54), emphatic attunement occurs when musicians play new phrases based on musical signals from fellow musicians. In a concert setting, the audience is often seen as a passive part, but the audience can also have an effect on the performance by responding actively.

Improvisation in music is understood as performance, moving between scripted and unscripted sections. The participants have to collaborate, use humour and be honest and truthful. They must follow rules of improvisation and train and practice for learning "the trade". There must be a good balance between structure and flexibility, in order to create good conditions for improvisational processes (Alterhaug, 2004, p. 109).

Berliner (1994) argues that musical improvisational activity includes preparation in form of practice and development of a musical repertoire, at the same time as the improviser creates new music in the course of a performance. Improvisational activity in jazz includes preparation in the form of training, very often by means of learning a standard music repertoire. Berliner describes such a repertoire as music "in the most functional language, things you can do" (Berliner, 1994, p. 102). The repertoire consists of a vocabulary including melodic and rhythmic patterns the musician uses as a basis for his or her improvisation in communicative interaction with other participants in the improvisational process. These patterns can be described as phrases or formulas. Several researchers point out that jazz musicians build their improvisations around fixed formulas, varied, expanded and developed within the musical context where they are, at any given time, a part of (Berliner, 1994, p. 63 ff; Steinsholt & Sommerro, 2006, p. 29). Berliner offers up "imitation" as a method for expanding one's musical repertoire. Imitated phrases contain information about style, phrasing and structure, and can therefore become a point of departure for the improviser`s musical journey towards the creation of a personal style of playing (Berliner, 1994, p. 36).

Improvisation in music is always influenced by the musical context (Bailey, 1993, p. 103). Musical contexts are structured events. Operating in such a musical structure, "timing" is of basic importance. King and Gritten (2011, p. 49) describe musical timing as *expressive* timing, and link timing in music to gestures, arguing that such timing is the direct result of patterns in movements. Most musicians improvise within a tradition. This tradition can be conservative or open to new ideas, but the tradition will always set up some boundaries for the improviser, regarding what is acceptable musical behaviour. Summing up, it seems to us that some of the most important aspects of musical improvisation are connected to collective relationship, timing and concepts such as performance, repertoire, communicative interaction, and context. Improvisation in music is also a listening exercise where the performer needs to be intensively aware of the environment as well as oneself and the other.

4.1.3. The concept of improvisation in theatre
Literature and practices of improvisation in theatre have inspired other fields, especially education and organizational theory, in much the same way as jazz theory (Cunha, Cunha, & Kamoche, 2002, p. 1; Sawyer, 2011a, p. 11). Even if improvisation is adequately described as a part of theatre (e.g. Frost & Yarrow, 2015; Johnstone, 2012; Zaporah, 1995), there seems to be less research literature on the improvisational characteristics of theatre performances.

While improvisation in music is understood as performance, improvisation in traditional theatre has mainly been confined to the creation process, because the final performance has a more or less fixed form when presented to an audience. The contemporary form *devised theatre* (Kjølner, 2000, pp. 4–9; Oddey, 1994, p. 42; Perry, 2011, p. 64), also called collaborative creation, is a form of theatre where the script originates from collaborative work by a group of people. This is an improvisational and collective production strategy and thus similar to, for instance, *Commedia Dell'Arte*. *Commedia Dell'Arte* was popular throughout Europe for almost 200 years, starting in the mid-1500s. Troupes of performers would travel from town to town, presenting shows in public squares and on makeshift stages. They would improvise their own dialogue, within a framework provided by a set "scenario".

Over the centuries, there have been many different improvisational styles, which have all influenced modern improvisation. Improvisational theatre today has partly evolved from a series of games developed for children's peer play (Sawyer, 1997, p. xviii). After *Commedia Dell'Arte* died off, improvisational theatre was separately reinvented by two people, who in many ways have shaped improvisational theatre as it exists today: Johnstone (2012) and Spolin (1963). Each, in their own way, they started formulating their theories on creativity, spontaneity and collective creative processes. Theatre forms that occurred in the wake of these theories are often labelled as *open theatre*, and are conceptualized by *performance* theories (Frost & Yarrow, 2015; Schechner, 1993). These modern improvisational theatre forms, where neither form nor content is predetermined, invite the spectators to participate. Central in improvisational theatre is the *communicative action* of give and take and the importance of *accepting* the offers and actions made by the other performers as well as the audience. When the performance succeeds in drawing the audience into its rhythm and the actors receive impulses from the spectators, Erica Fischer-Lichte (2008, p. 39) calls this autopoetic feedback loops. Postmodern improvisational theatre forms seem to be mostly interested in the dynamic process (Spolin, 1963) between the passive onlooker and the active participant.

Parts of improvisational theatre thus have no script, sets or costumes, possibly a few props; the actors can play a variety of roles and the audience participates in different ways, for instance by deciding the topic or storyline, or by entering the stage and become participants. The audience's decisive power and their ways of influencing the performance shift the focus of a performance into a more democratic interaction (Fischer-Lichte, 2008, p. 52).

To sum up, improvisational theatre performances emphasize participation and verbal and non-verbal interaction within a few given frames in an open structure. Theatre is a bodily activity, where the improviser not only has to control verbal expression, but also movements and gestures. It is a form of theatre where the players in collaboration create most of the dialogue, action, story and characters in the moment it is performed. The improvisers thus need to be able to construct characters here and now that are demanded by the situation. Additionally, improvisational theatre is unique in its relationship to the audience and in its intention of communicating through fictional means.

4.1.4. Characteristics of improvisation in the three root traditions

In our process of reviewing the literature on improvisation in the three root traditions—rhetoric, music and theatre––we find that each one of them can be seen as embedded in paradigms that constitute, preserve and legitimize the tradition in question. In other words, they are highly contextual.

It seems to us that even if there are obvious differences between the theories and use of improvisation in the three root traditions; they are often culturally linked to discursive differences, e.g. in the question of the role or importance of an audience, the influence of the media belonging to the tradition (sound, language or gesture) or the focus on process as something in itself. However, there is no doubt that literature as well as improvisational practices in the three root traditions demonstrates common and very essential characteristics of improvisation as a concept, a skill and practice. These essential elements seem to be connected to the following topics: (1) communication and dialogues,

(2) structure and artistic design, (3) learnable repertoires and preparation and (4) context. It can be argued that some of these common characteristics are more visible in some traditions than others. The issues of artistry and aesthetics for example, are clearly more visible in music and theatre than in the rhetorical field. However, as we have shown, also in rhetoric writers describe rhetorical practices as "artful" or "artless" and rhetorical theory is, by many, considered as an early example of a philosophy of aesthetics (Jost & Olmsted, 2004).

4.2. Applications of improvisation in professions

In this part we will focus on the findings in our own field––education and teaching––with a side view to findings in the field of organizational theory. Compared to music and theatre, findings on the application of improvisational theory and practices in professions are not numerous, except for the field of drama, perhaps, which we will turn to when we take a closer look at education. First, however, we will present some of the improvisation theory on leadership and organizations.

4.2.1. The concept of improvisation in organizational theory

Since the 1990s there has been a rapidly growing interest in the field of organization and management in how to define, explore and implement the concept of improvisation (Dehlin, 2008, p. 1; Kamoche, Cunha, & Cunha, 2002, p. 1; Leone, 2010, p. 1). One should, however, also be aware of the risk of acting "near-sightedly", not being able to understand prospective negative consequences for others in the organization when focusing on improvisation as a professional competence (Holmene, 2010, p. 7; Irgens, 2007, p. 43; Leone, 2010, p. 1). Improvisation is not based on intuition, but a skill that can be, or ought to be, learned. However, both limitations and potentials should be considered (Crossan & Sorrenti, 2002, p. 44) when integrating improvisation in organizations and everyday life (Dehlin, 2008, p. V; Montuori, 2003, p. 237).

Several empirical studies have been conducted within this field, mostly qualitative but also quantitative (Cunha et al., 2002, p. 97; Dehlin, 2008, p. V). The field seems to be inspired by jazz and theatre performance, as well as multiple other frameworks (Leone, 2010, p. 1), like sports, anthropology and sociology. The understanding of improvisation seems to be based on different epistemological and theoretical paradigms, such as sociocultural, phenomenological, postmodern, pragmatist and grounded theories (Dehlin, 2008, p. 66; Kamoche et al., 2002, p. 2; Leone, 2010, p. 9; Weick, 1998), yet there seems to be a need for a clearer conceptualization and understanding (Leone, 2010). Thus several writers argue for redefining and developing a new improvisatory language (Dehlin, 2008, p. XIII; Hatch, 2002, p. 91).

In the literature on organization and management, we find several concepts connected to the definitions of improvisation, like creativity, intuition, convergence in time between planning and execution, novelty and bricolage (using the resources at hand) (Cunha et al., 2002, pp. 100–104; Leone, 2010, pp. 3–4). Dehlin (2008, p. 1) argues that improvisation, like good leadership, must combine emotions, cognition and social practice. However, a full definition remains a challenge, with the concept of improvisation in organization being confused with other concepts (Leone, 2010, p. 11).

Karl Weick argued that a jazz band could be seen as a prototype organization and claimed that the metaphor of jazz could be generalized to other fields, like human relations and communication in general (Weick, 2002, p. 52). Cunha et al. (2002, p. 97) describe three stages of how research on improvisation in organizational theory has developed. At the first stage, the research activities are connected to research on jazz improvisation, assuming that the understandings and metaphors from this tradition could be transferred to different forms of organizations, without, however, critical discussion of contextual limitations. During the second stage, the researchers concentrated on collecting anecdotes and empirical evidence from the business area. At the third stage, critical perspectives and limitations (Cunha et al., 2002, p. 97) are brought in to the discussion, but still considering jazz as a useful metaphor for leadership (Newton, 2004, p. 83).

An important prerequisite for improvisation in organizations to take place would seem to be an experimental and innovative attitude, to tolerate errors (Newton, 2004, p. 86) and to have minimal routines and scripted structures. It seems, however, also important to emphasize planning, as planning and improvisation can be considered to be complementary, not alternatives (Leone, 2010, p. 15).

Dehlin (2008, pp. 221–227) argues that organizational improvisation can be both positive and negative. There can be biases and an overreliance on (jazz) improvisation, and one must have the freedom to alter plans or sequences of action. Furthermore, he argues that improvisation is more like a capacity than a real competence (Dehlin, 2008, p. 97). Improvisation can be negative, or reactive, when the individual is compelled to react or to resolve "uninvited" complexity. Then there is external pressure to resolve complexity and avoid chaos. By improvising, one can develop expert knowledge and the ability to take chances in the risk society (Newton, 2004, p. 93). Newton argues that this might also be useful for school leadership, hiring those with high competence, and allowing them to ensure learning in the organization by improvisation (Newton, 2004, p. 96).

Summing up, our findings clearly show that research on improvisational practices in organizations are heavily influenced by the root traditions of music and theatre (Cunha et al., 2002, p. 106), such as spontaneity, convergence of design and execution phases (Leone, 2010). This also involves the holistic aspects of human relations (Weick, 2002, p. 52), timing and structures in actions (Hatch, 2002, p. 91) and the inclusion of participants' skills and performance in an experimental culture (Cunha et al., 2002, p. 115).

4.2.2. The concept of improvisation in education and educational theory

Our review findings in education and educational theory suggest that improvisation in this field on the one hand is a young and not yet a fully developed concept, and on the other hand is based on long-standing tradition. The reason for such a seemingly dichotomous point of view is primarily connected to the division in educational theory between theory on teaching as a general pedagogic skill and the teaching of subject matter. In the Anglo-American tradition, this is referred to as the schism between pedagogical content knowledge (PCK) and general pedagogic knowledge (Shulman, 1986; van Driel & Berry, 2010). In music for example, literature on *the teaching* of improvisation as a skill in musical expression is vast, but this literature and corresponding teaching practices are not necessarily improvisational teaching skills (Whitcomb, 2013, p. 44).

In the field of education, it is within the tradition of drama in education that improvisational practices are most frequently described and discussed. Drama has an improvisational tradition of it's own and is directly influenced by the root tradition of theatre. Drama in education differs from theatre because it is mainly an educational strategy, where the students invent and enact dramatic situations for their own development and learning more than for an outside audience. This tradition has also been called classroom drama, it's focus is more on the learning process based on improvisational fictional communication than on the theatre product. Process drama typically represents classroom drama (Bolton, 1984, p. 140, 148, 1992, p. 11) and is a whole-class methodology with an inquiry-based, improvisational approach. It is framed as interrelated sequences that together constitute a whole. Improvisation is central in form and content, it is unscripted but with certain frames. Fiction and role-plays are core elements, and characters and situations are explored as if they are real, but process drama includes traditional teaching sequences as well. This educational strategy represents a way of exploring a theme/problem/topic over time and includes constant shifts between reflection in and out of role in order to examine real life. According to Viola Spolin (1963, p. 383), the nucleus of improvisation is intuitive activity, which helps to address real life situations (Toivanen, Komulainen, & Ruismäki, 2011, p. 62).

Toivanen et al. have, with reference to teacher education, described the goals of improvisation in drama as a teaching method. First, they say, improvisation may increase the students' awareness of self (mind, body, voice) and relationships to others. Second, improvisation may increase the

interaction skills of teacher students, e.g. to improve clarity and creativity in the communication of verbal and non-verbal ideas. Thirdly, improvisation may increase the students' understanding of human behaviour, motivation and diversity in educational situations (Toivanen et al., 2011, p. 62).

In her book *Improvisation and Education: Learning Through?* Kathleen Gallagher (2010) gives an overview of theatrical improvisation, literature and practice in education. Using improvisation to examine social agendas is a teaching strategy with a very long history in drama, made most famous by among others Augusto Boal, who developed the concept of a "spect-actor", in the meaning of simultaneously being both an actor performing and a spectator viewing. The "spect-actor" can move in and out of the fictional action in order to advance the improvisation and address the political and social issues at stake in the theatrical presentation (Gallagher, 2010, p. 46). Gallagher concludes her article by stating that in the arena of learning, improvisation returns the body to it's rightful place (Gallagher, 2010, p. 46). Learning through improvisation in drama, thus means that the whole person, body and mind, is involved when he/she is going into a role and becoming someone else.

Devised theatre and devising processes in drama in education are used to make the group explore a material in order to create new material. A devised process is an improvised and explorative drama and theatre practice which reflects a close relationship to Dewey`s pedagogy and pragmatic aesthetics. Devised processes contain instability, and this shifting path makes devised work demanding, risky and exciting (Bicât & Baldwin, 2002, p. 7). Pragmatic aesthetics emphasize artistic exploration playing with possibilities rather than viewing knowledge as something constant and given (Bicât & Baldwin, 2002, p. 32). The students should not only demonstrate what they know but be active creators and producers of their lives and learning. This might happen in improvisational meetings that demand complete presence (Karlsen, 2006, p. 252). Karlsen also states that improvisation might detach us from the defined final goals of classroom practice to education as a form of *creative activity*, which opens up not what is present but what is to *become* (Karlsen, 2006, p. 242).

Literature on improvisation, outside PCK-related and drama theories, is also dominated by theorists with a special relationship to the arts, notably Elliott Eisner and his followers (Eisner, 1983; Greene, 1995; Rubin, 1985; Sarason, 1999). These writers emphasized the performance aspect of teaching, arguing that teaching could be described as the *art* of teaching in the didactic tradition of Johan Amos Comenius (1907, p. 19).

Recently, the American professor Keith Sawyer seems to have become the dominant writer in this field. His edited book *Structure and Improvisation in Creative Teaching* (Sawyer, 2011a) deals directly and extensively with improvisation in teaching and teacher education. Sawyer builds on the Eisner tradition but he also critiques this tradition, arguing that Eisner and his immediate followers pay too little attention to the fact that education takes place within set structures and disciplines. His 2011 book, along with a number of previous publications on improvisation as a part of creative teaching (Sawyer, 1996, 2000, 2002, 2004) includes many references to drama as well as to the root traditions of music and theatre.

In the introduction to his 2011 book, Sawyer introduces the concept of "disciplined improvisation". According to Sawyer, good creative teaching must be understood as a balance between structure and improvisation. Sawyer (2004) explains the concept of teaching as a form of disciplined improvisation as follows: "Creative teaching is disciplined improvisation because it always occurs within broad structures and frameworks," (Sawyer, 2004, p. 13) and "disciplined improvisation is a dynamic process involving a combination of planning and improvisation" (Sawyer, 2004, p. 16).

The concept of "disciplined improvisation" is inspired by Paul Berliner's (1994) definition of improvisation and by Karl Weick's concept of "disciplined imagination" and his work on improvisational thinking in organizations (Beghetto & Kaufman, 2011, p. 94). The focus is on how collaborative classroom discussions might be conceptualized. Beghetto and Kaufman's definition is:

> Disciplined improvisation in teaching for creativity involves reworking the curriculum-as-planned in relation to unanticipated ideas conceived, shaped, and transformed under the special conditions of the curriculum-as-lived, thereby adding unique or fluid features to the learning of academic subject matter. (Beghetto & Kaufman, 2011, p. 96)

The word "discipline" refers to the fact that teaching and learning must be structured and that "improvisation" refers to what aspects will be more or less fluid (Beghetto & Kaufman, 2011, p. 96). In teaching, one has to search for "teachable moments" (Erickson, 2011, p. 120). There has to be structure, or some "guiding formats that aid students in moving from novice to expert performance" (Wood, Bruner, & Ross, 1976, p. 123). Expert teachers manage the knowledge base of expertise in their subjects and are able to apply this in an improvisational way. DeZutter argues in her article "Professional Improvisation and Teacher Education" that teaching is "inherently improvisational" and that it is important to address the concept of improvisation as a professional concept because of the improvisational nature of teaching. As a teacher, one must have space for freedom and develop a climate for risk taking. There is not a position of either extreme, but a kind of balance between scripted performance and improvisation (Dezutter, 2011, p. 27). The dilemma is that a classroom is often overly structured and scripted, and this must be altered because "when teachers become skilled at improvisational practice, their students learn more effectively" (Sawyer, 2011b, p. 14).

To sum up, there seem to be major differences in the practice and description of improvisation between the root traditions, as well as between the root traditions and the two traditions we have labelled as applications of improvisation. Rhetoric, music and traditional theatre all have a strong focus on the improvisational process. In rhetorical situations, the improvisation is performed by means of body and voice, building on a planned script in order to affect the audience. Although we know that a lot of musical improvisation takes place as communication and interaction between musicians, musical performances are normally directed towards an audience. In traditional theatre, improvisation is performed by the expressive means of body and voice, building on a planned manuscript in order to affect and give the audience a theatre experience. All these traditions are performative and the performances are directed towards an external audience.

In the two traditions where improvisation is applied—education and organizations—a traditional audience is not involved. The main focus is therefore shifted from a monological to a more dialogical perspective, from closed-scripted to open-scripted forms, in other words a shift from a more traditional performance to interactivity and responsiveness. This shift illustrates again the importance of understanding improvisation as a concept as a part of a specific context.

5. Discussion

In this part we will summarize and discuss our findings in the five traditions we have examined in order to answer our second review question: In what ways are characteristics of these [improvisation in different traditions] comparable or even generic, and how can different practices and theory on improvisation contribute meaningfully to our understanding and description of professional improvisation in education?

The dialogic, open-scripted, interactive and responsive aspects of improvisation fit well with the shifts in the situation shared by a teacher and students. Teachers have a special responsibility to act in accordance with the situational needs and requirements arising in each situation, for the benefit of all participants. Summing up our findings so far, we have identified four different aspects of improvisation, which appear to be of special and crucial importance in any discussion about improvisation as a key concept in education and teaching. These aspects are: (1) communication and dialogues, (2) structure and design, (3) repertoire and (4) context.

We consider these aspects to be especially relevant for a continuing and *renewed* discussion on improvisational practices in education.

5.1. Professional improvisation in education and teaching involves interactive communication and dialogues

All of the five traditions we have reviewed strongly emphasize the importance of the communicative aspect of improvisation, and the importance of dialogues and interactivity. Communication and dialogues are aims as well as methods, products as well as processes. However, there are some differences between the traditions with regard to *who* is communicating and what the *purpose* of the communication may be. In improvisational music, there is seemingly a strong focus on the musician and less on the audience. In improvisational theatre and drama, there appears to be a stronger focus on the audience and interaction. In rhetoric the purpose is to hand over a message to the audience in the most efficient way, also with regard to improvisation as a means to fulfil this purpose. Thus improvisational interaction with the audience is less present. In education and organizations, the essence of improvisation might seem to be linked to dialoguing and specific contexts. We will argue, however, based on our review findings, that purposes of communication in improvisation in all traditions, "roots" as well as "applications", can be described along a continuum of two positions depending on where the focus is: From the *internal* process of communication itself to the *external* intended result of it. The purpose of the improvisation can also vary from emphasizing the effect on the audience to emphasizing the process of exploration.

In education, these positions remind us of the importance of the performance skill of the teacher but also of a teacher who is highly aware of and able to relate to the learners in a specific context. Gert Biesta argues that any teacher needs to occupy such a position and that education is primarily a communicative profession. However, he is also very clear about where communication in education should take place: "Education is located not in the activities of the teacher, nor in the activities of the learner, but in the interaction between the two". In other words, education and hence communication, takes place in the gap between the teacher and the learner and it's character is transformative and relational (Biesta, 2004, pp. 12–13).

Improvisational communication in educational theory and practice is closely connected to responsiveness, understood as sensibility and readiness to act sympathetically in empirical situations there and then. The student teacher or teacher must respond to pupils' needs for different ways of learning and to be able to respond at the right time and in adequate ways relating to different pupils and groups. Barker and Borko (2011, p. 281) underline that communicative improvisation is to be present, to listen and to interact. Mutual respect is a prerequisite for a negotiable communicative climate, leading to trust. When opening up for trust and safety, persons and groups make themselves vulnerable to failing, a state of mind that facilitates risk taking and creativity. Trust enables risk taking, and as participants in a trustful group climate, pupils and teachers can engage themselves fully in fruitful discussions, actions and reactions, and exploring golden and teachable moments through improvisational communications and creative teaching (Sawyer, 2015, p. 5).

5.2. Structure and design dimensions are important in improvisational practices

The question of the role of structure and planning in improvisation, and using scripts, is a core question in the different traditions of improvisation. Writers in all the five traditions we have examined underline, to a more or lesser extent, that to be a good professional improviser, you have to be aware of and be skilled in planning and structural thinking. In rhetoric practices, structure and design is connected to "artful" improvisation. In music and theatre, the issue of time and timing is an integral part of every musical and dramaturgical practice, perhaps improvisational ones in particular.

In professional improvisation in education, the use of language, verbal and non-verbal, is crucial, not only as a means of communication but also as a modifying structural instrument in the implementation of something designed and prepared. The verbal and the non-verbal constitute expressive means that can initiate a new sequence in a teaching situation, intensify it or end it.

In professional and improvisational teaching, "timing" is crucial as well, not only with regard to *when* to respond to an individual student in a teaching situation but also in *educational*

decision-making, be it in a moment of contingency for assessment or learning purposes (Black & Wiliam, 2009, p. 10) or as a spontaneous teacher decision on *how to shape* an ongoing teaching and learning sequence.

Structure and design dimensions of professional improvisation in education may well be described as a "dramaturgy" of education, but one has to keep in mind that the effect of what is designed and implemented always must focus on pupils' learning, and that the nature of improvisation cannot override curricular frameworks. Education has, for a long time, emphasized a scripted, sequenced, planned and disciplined approach, where improvisation has only been tacitly present (Bird, Morgan, & O'Reilly, 2007; Gagne & Briggs, 1974).

In order to meet student needs, the teacher has to be present in the moment and make structural shifts if necessary. Sometimes this implies changing the whole scripted plan for the lesson and sometimes it only includes minor changes. There might be different reasons for making these structural changes and the shifts might contain different characteristics. If the students, for example, have problems understanding something, the teacher has the opportunity to change methods or expand the situation in order to go deeper into the topic or to move on to a new sequence. Being in charge of the classroom situation, which always evolves over time, the teacher has to make fast decisions and every decision influences the other and the involved participants. Since the classroom situation is dependent on mutual agreement and interactivity to function satisfactorily, the teacher has to be able to listen carefully and interpret every sequence of the situation in order to make choices that are to the benefit of all the students.

5.3. Professional improvisation relies on learnable repertoires and the spontaneous use of ideas and examples

Learnable repertoires are, as we have seen, an underlying prerequisite for improvisation in all of the traditions we have labelled as root traditions. A repertoire differs from root tradition to root tradition. In rhetoric practices, the notion of *copia* means to have a supply of phrases, examples, formulas etc. to be learned and stored. In musical practices, a repertoire can mean familiarity with musical pieces, such as "standards" in jazz, but also by controlling scales, riffs, chord progressions etc. to use in different improvisational settings. In theatre, a repertoire might mean to have appropriated a body of texts and different ways of acting. For the improvising teacher, to rely on a professional repertoire is just as important. The need to rely on a relevant repertoire, such as a repertoire of different examples or educational methods (narratives, pictures, figures, activities, gestures, etc.), which can explain, introduce or demonstrate a concept, a theory, a way of working or a problem, is a must in any classroom. Lee Shulman (1986, p. 203) describes repertoires as a teacher's total collection of resources as "a veritable armamentarium of alternative forms of representation, some of which derive from research whereas others originate in the wisdom of practice".

A repertoire is a prerequisite for the use of the golden moments that may occur in classroom dialogues during a lesson, and also for the teacher's ability to be able to change a planned structure out of a perceived need in the situation. The repertoires of the teacher and the student teacher will, to a large extent, be shaped by content knowledge and PCK curricula linked to the educational context. Schulman makes a very important point when he underlines that repertoires for any subject need to include "the most useful forms of representation of those ideas, the most powerful analogies, illustrations, examples, explanations, and demonstrations" (Shulman, 1986). To us, it seems that for any teacher action or interaction to be most useful, it means an ability to act meaningfully and purposefully in the immediate classroom situation. In other words, teachers need to be able to improvise professionally.

However, repertoires will also build on personal experiences, and knowledge of a non-curricular kind obtained from different sources. This fact points to the importance of the teacher and the teacher student developing broad repertoires containing knowledge on the subject that he or she is

going to teach, as well as training in identifying the moments when the need for improvisation occurs and give adequate responses in the given situation.

5.4. Professional improvisational practices are context dependent and domain specific to a great extent

Review findings indicate very clearly that improvisational practices in different traditions have a number of common characteristics. But they are also different, simply because they operate and are described in different contexts, e.g. in terms of operating with different means of expression, different art forms, genres, times, situations and different goals. Rhetoric improvisational practices are primarily verbal expressions, music primarily evolves as expressive soundings, and theatre and drama are primarily enacted, verbal and gestural expressions. These differences stand out in our findings to such an extent that they may well be described as paradigmatic, developed by members of certain scientific and professional communities as something they have in common, that is to say, the whole set of techniques and values shared by the members of communities (Kuhn, 2012, p. 11). As such therefore, improvisational practices are inherently contextual and as a domain must be included "as a component of the creative process because creativity does not exist in a vacuum" (Kuhn, 2012, p. 211). In our view, this will also apply to improvisational practices and their corresponding theory. However, we hope to have shown in this comparative review that the fact that even if something, i.e. improvisation, appears to be different, paradigmatic or specific, it does not mean that other fields than the one in question cannot imitate it, adapt it or learn from it. According to Csikszentmihalyi, "it is impossible to introduce something 'new' without reference to that which has preceded it" (Csikszentmihalyi, 2014, p. 210).

6. Concluding remarks

Even if we have described four common aspects of improvisation as separated dimensions, there are obvious overlaps and links between them. For example, timing is dependent on communication and dialogue, structure and design, repertoire as well as context and domain specificity. Other overlaps could be the dynamic interaction between fixed design structures and negotiable design structures. Revisiting this article's vignette, we will argue that the situation described displays a number of challenges for teachers, challenges that are connected to the concept of improvisation as a key curricular concept in education and which we have examined and discussed at length in this text. The student had planned and designed a structure for the lesson. We could observe that, through a dialogical interaction, she experienced a need to adapt and change in order to give an adequate response to the student and the class, but she failed to do so because she seemed to lack the necessary pedagogical content repertoire and an improvisational attitude and knowledge to conduct such a change. Her actions, or rather lack of actions, display one of many challenges and dilemmas teachers are faced with every day, and which, we argue, can be meaningfully discussed in the light of our knowledge of improvisational practices extracted from root traditions.

Theory on and practices in improvisation in the field of education up till now seem to share a number of the essential and common characteristics we described for the root traditions of rhetoric, music and theatre. Our analysis of the review findings show that there is much to gain for education in a close study of improvisation in the academic traditions we have examined. The findings show that improvisation as a professional concept in education can draw from a number of practices and sources in order to develop and establish itself as a key curriculum concept in different theories on teaching. It seems to us that the discussion on improvisation in education, which started out as a view of teaching as performance and inspired by the root traditions of music and theatre (Eisner, 1983; Greene, 1995; Rubin, 1985; Sarason, 1999), is now being balanced by other writers. These writers remind us of the fact that artistic expression is very different from teaching and that professional improvisation in education will take place in a curriculum-driven context where planning and given structures are basic prerequisites. Although we still think the essentials of improvisation as seen in the root traditions are highly relevant, it seems to us that future discussions of professional improvisation in teacher education must be more coloured by the paradigmatic specificity of education.

cogent ·· education

Timing and artistic design are still important, but the focus needs to be on educational structures and motivational designs.

Four essential aspects (or characteristics) of improvisation can be extracted from this comprehensive and comparative review: Communication, structure and design, repertoire and context. We have criss-crossed the notion of improvisation in teaching in order to place it in the theoretical, practical, historical and educational landscape. As the opening vignette showed, teachers have to be prepared for the unexpected, for uncertainty and for immediacy. In our view, this is the core of being a teacher and it this that makes teaching such an exciting profession.

This overview is meant to be a tool for further exploration, because, as we have shown, practices in other fields than education, can be seen and utilized as developmental resources of the relatively young field of educational, professional improvisation.

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Note
1. A web-based reference management system: www.proquest.com/products-services/refworks.htm.

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