Music education in adolescence – A pathway to entrepreneurial identity?

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Abstract
This study examines the relationship of music education (ME) and entrepreneurship education (EE) received during adolescence with the entrepreneurial identities of university students. Researching adolescent ME alongside EE as a potential enabler of entrepreneurial identity is crucial to understanding the complementarities between ME and EE and so developing knowledge of what kinds of education may contribute to entrepreneurial identity formation. It might also be useful to consider these research insights when developing educational interventions for adolescents. The analysis is based on a sample of 190 Bachelor’s-level students from different study backgrounds (business, arts and humanities, etc.) surveyed in one European country. The study finds that both ME and EE received in adolescence are related to entrepreneurial identity in adulthood. However, it is the extra-curricular ME, taken in addition to the secondary school curriculum, that makes the difference and moderates the relationship between EE and identity. The findings contribute to expanding the identity development discourse in the entrepreneurship literature and bring novel insights to EE research by highlighting extra-curricular ME as a potential alternative pathway to entrepreneurial identity development. On a more general level, the study provides an input into the adolescent education literature and learning transfer in education research.

Keywords
Adolescence, entrepreneurship education, entrepreneurial identity, music education

In the modern world, being entrepreneurial – or at least occasionally behaving entrepreneurially – is not only a popular youth trend but also a necessity for coping with economic uncertainties and rapid technological progress. Entrepreneurial behaviour is multi-contextual and transferable, meaning that it can be expressed through creating new enterprises, launching new projects in an existing organisation, hosting family events (Baron and Shane, 2008) or in any other way that requires a certain way of thinking and living (Nabi et al., 2010, 2017). Creativity, proactivity, flexibility and the ability to deal with uncertainty and generate new ideas are some of the characteristics associated with entrepreneurial behaviour. Reflecting current societal tendencies, educational policies and initiatives increasingly aim at integrating elements of entrepreneurship education (EE) at all levels of education, including kindergartens and secondary schools, to foster the development of such characteristics (EU, 2006; Kuratko, 2005; Seikkula-Leino, 2011). The idea is for the seeds of entrepreneurial identity formation to be planted at a young age and in adolescence (Erikson, 1968) so as to blossom later, in adulthood.

Indeed, Erikson, the founder of the psychosocial development theory, believed that the main task of adolescence was the formation of identity (Erikson, 1968). Adolescence is the time when an individual starts asking ‘Who am I?’, ‘What is my place in the world?’ and ‘Which group of people do I belong to?’ The greatest advances in identity development occur during adolescence, which

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spans the ages of about 12–18 years (Dekovic and Meeus, 1997; Sawyer et al., 2018). This period is particularly receptive to environmental influences, and educational experiences play a crucial role in the adolescent’s identity formation processes (Eccles et al., 2003). Education is one of the most influential channels for stimulating long-term socioeconomic changes (Landström, 2005) in that it shapes individuals’ identities, which subsequently drive certain behaviours (Murnieks et al., 2012; Stryker and Burke, 2000).

Entrepreneurship education can be conceived as the most intuitive way of developing entrepreneurial identity. Yet, EE has scarcely been researched in connection with identity, where identity would serve as a dependent variable or a potential long-term outcome of EE (Nabi et al., 2017). In higher education, EE is defined as a process of equipping students with an enhanced capacity to generate ideas and the competencies to make them happen (QAA, 2018). Prior identity studies in entrepreneurship research have a rich understanding of the relationship of identity with the antecedents of entrepreneurial behaviour, such as intentions and confidence in taking entrepreneurial actions (Alsos et al., 2016; Henry, 2013). However, in this discourse identity is often depicted as an explanatory (independent) variable, and this is less informative in the educational context which sets directions for developing specialisation-gaered identities among students.

Having a strong entrepreneurial identity in adulthood means that an individual is more likely to engage in entrepreneurial behaviour in various life contexts. The general expectation of EE integration among policymakers and educators is that it will help graduates to land successfully on the ground of the labour market, including in the creative industries (Haukka, 2011; QAA, 2018). Furthermore, other areas of education that might affect entrepreneurial identity formation, such as music education (ME), deserve closer attention as possible alternatives for stimulating this identity.

Music education is the process of learning music theory and history, active listening, singing and playing instruments, and sometimes includes experiments and improvisation (Hietanen and Ruismäki, 2016). Similarly to the multi-contextual nature of entrepreneurial behaviour, music is hailed as a universal human behaviour and means of individual expression (Campbell et al., 2007). Previous research has depicted ME as a meaningful experience affecting identity formation in general (Davis, 2005). It has consistently been linked to positive learning effects, such as increased cognitive ability in mathematics and language (Burton et al., 2000; Southgate and Roscigno, 2009). It is also known to develop adaptability and openness to new possibilities, among other entrepreneurial characteristics (Blackburn, 2018). Whether or not an individual chooses music as a future profession, the creativity, sensory memory and ability to work with others that ME develops, individually or through forming communities around rehearsals and concerts (Pavlicevic and Ansdel, 2004), have a lot in common with the qualities and competencies of entrepreneurial individuals, especially in arts entrepreneurship (Burton et al., 2000; Schediywi et al., 2018).

Another important factor to study closely is the period when the foundations for identity formation are laid. Erikson (1968) believed that the developed identity tends to be fixed at the end of adolescence but also suggested that it might evolve throughout adulthood. Identity scholars have explored in both directions. Some claim that several aspects of the identity developed during adolescence – such as meaning-making structures – are stable over an extended timeframe, and some individual changes are still possible (e.g. Kroger, 2007). This stance represents a positivistic view of identity (Alsos et al., 2016). Others have tended to think that identity development is an ongoing process of becoming (e.g. Burke, 2006), thus representing the socio-constructivist stance (Alsos et al., 2016). The current study focuses on the positivistic stance while acknowledging both perspectives.

Previous research has highlighted a strong association between identity formation and participation in diverse educational activities during adolescence (Eccles et al., 2003). However, the connection between the latter and the former has been largely overlooked when studying the interplay of education and entrepreneurial identity. Given the significance of adolescence as a period when the foundations for identity are laid, it is valuable to research how learners’ early-age educational activities may relate to their identities in adulthood. Shedding more light on this can help educators and parents, or stakeholders otherwise involved in the upbringing of adolescents, make more conscious and grounded decisions on curricula design affecting adolescents’ long-term futures.

This study works on narrowing the identified research gaps by examining the relationship of ME and EE received during adolescence with the entrepreneurial identities of university students. Researching adolescent ME alongside EE as a potential enabler of entrepreneurial identity is crucial for understanding the complementarities between the two, developing a more complete knowledge of what kinds of education may contribute to entrepreneurial identity formation, and considering insights from identity scholarship when developing educational interventions for adolescents. While previous research has extensively highlighted the positive effects of ME, it is also important to understand how these effects may differ depending on the type of ME in order to design effective educational interventions. This study looks into the effects of curricular and extra-curricular activities, since learning beyond the school curriculum implies the use of one’s own initiative to learn and/or a broader understanding of the dynamics of learning, such as the transfer of competencies across disciplines.

The research sample comprises 190 Bachelor’s-level students from social science, business and law, and arts and
humanities programmes at leading universities in one European country. The data were collected in spring 2019 using an online survey. Ordinary least squares (OLS) regressions were used to analyse the data.

The analysis shows that both ME and EE received in adolescence are related to entrepreneurial identity in adulthood. However, it is the extra-curricular ME, taken in addition to the secondary school curriculum, that emerges as making the difference. At the same time, ME acts as a moderator of the relationship between EE and identity, such that when a school offers no EE extra-curricular ME can substitute for it in terms of the strength of entrepreneurial identity it fosters. The analysis also shows that no other type of adolescent extra-curricular activity (for instance, sports, performing arts, science and research) has a similarly positive effect on entrepreneurial identity. However, simultaneous involvement in extra-curricular sports and curricular EE is associated with stronger entrepreneurial identity. In this study, we elaborate on the possible implications of these findings.

This study contributes to expanding the identity development discourse in the entrepreneurship literature (e.g. Alsos et al., 2016; Leitch and Harrison, 2016) and brings novel insights to EE research, suggesting practical applications for the education of adolescents. One of these is highlighting extra-curricular ME as a potential alternative pathway to entrepreneurial identity development, especially in the absence of institutional resources for EE delivery (Donnellon et al., 2014; Harmeling, 2011). The findings may also be valuable to ME research and practice, insofar as EE and entrepreneurial behaviour are of interest to music students (Schediwy et al., 2018). Furthermore, the findings bring about an important distinction between curricular and extra-curricular ME for the purposes of developing entrepreneurial identity. On a more general level, the study provides an input into the adolescent education literature and learning transfer in education research, relating, in particular, to the discussion of the Eriksonian theory of identity development throughout one’s lifetime and cross-disciplinary competence development (Baldwin and Ford, 1988; Burton et al., 2000; Erikson, 1968; Kroger, 2007).

The study is structured as follows. First, the study’s theoretical background in identity research is presented. Next, the methodology section details the data collection procedures, measures and methods of analysis. The findings section then outlines the study’s results. The final section is devoted to discussing the results, their implications and their limitations, and to providing suggestions for further research.

**Theoretical background**

An individual’s identity is an inner frame of reference through which the individual perceives and interprets the outer world, social situations and their own actions (Alsos et al., 2016; Wells, 1978). The most distinct frames are identity in the scope of culture and ethnicity, identification with a social group and identity in relation to parts of the self which is composed of different roles (Stryker and Burke, 2000). According to social psychology and identity theory, an individual starting a new venture creation process shapes their frame of reference for self in relation to other social roles undertaken (e.g. ‘employee’, ‘mother’ and ‘teacher’) and self-perception relative to other people (Fauchart and Gruber, 2011; Murnieks et al., 2012; Sieger et al., 2016). Individuals learn what it means to be someone (e.g. to ‘be an entrepreneur’) or to live in a certain way (e.g. to ‘be entrepreneurial’) through socialisation and observation that begin in early childhood and adolescence. Social constructivism views identities as a fluid processes of becoming, while the dominant identity theories (role and social identity) rely more on a fixed, positivist view of identity (Alsos et al., 2016). The latter view suggests that several aspects of identity are formed by the end of adolescence and remain stable over an extended period (Erikson, 1968; Waterman, 1982). The current study acknowledges that identities are socially constructed and some changes do take place throughout an individual’s lifetime. Simultaneously, numerous inner frames of reference and the foundations for their development are likely to be shaped before the beginning of adulthood and, hence, to influence the ‘process of becoming’ in the future (Alsos et al., 2016: 3; Kroger, 2007).

Research on entrepreneurial identity is concerned with how individuals see and understand themselves as entrepreneurs or as entrepreneurial individuals (Alsos et al., 2016). Being entrepreneurial means possessing the individual characteristics necessary for setting up and managing a venture or acting as an entrepreneur in conditions of paid employment (Donnellon et al., 2014; Nabi et al., 2010). Proactivity, creativity, resilience to change, tolerance of uncertainty and the ability to come up with a new idea and act on it are some of the characteristics commonly associated with being entrepreneurial (Nabi et al., 2017). The contemporary entrepreneurship literature extends the behavioural expression of these characteristics from venture creation to a variety of life contexts (inclusive of leisure activities, family life, etc.) in which individuals create something novel and generate value for society (Baron and Shane, 2008). Given that entrepreneurial identities are the frames of reference or cognitive schemas of interpretation based on prior observations, expectations and internalisations of meanings associated with the entrepreneurial role (Murnieks et al., 2012; Stryker and Burke, 2000), one does not have to be an entrepreneur in order to have an entrepreneurial identity. To identify one’s sense of self with being entrepreneurial, to feel belonging among people who think or act entrepreneurially, to see entrepreneurialism as part of one’s self-image – all these aspects of identity can be formed through related educational experiences and expressed in different
contexts. The present study views the frame of reference ‘I am entrepreneurial’ as a feeling or perception rather than as the necessary possession of certain individual characteristics.

In the identity research literature, it is common to measure the strength of identity using two constructs: centrality and salience (Alsos et al., 2016; Stryker and Serpe, 1994). Centrality represents the relative importance that an individual attributes to a specific identity compared to other role identities she or he might have. Salience measures the strength of situation-specific identities, or a probability that in a particular situation an individual will act out of a focal identity (Murnieks et al., 2012). Both concepts have been found, empirically, to predict behaviour; the stronger the two constructs are for a particular role identity, the stronger the tendency to behave according to this role identity (Stryker and Burke, 2000; Stryker and Serpe, 1994). Centrality requires conscious thought and reflection, while salience manifests itself primarily in behaviour, and hence can be present unconsciously (Murnieks et al., 2012). In the present research, identity is discussed in terms of centrality in order to study conscious identification with one’s entrepreneurial identity in adulthood.

**Conceptual framework**

Individual identity development can be harnessed through various educational activities. These activities foster the formation of certain individual and social personality characteristics that set up a frame of reference for ‘who I am’ in relation to the self and others, and ‘what kind of self I am’ as part of others (Eccles et al., 2003). Identity scholars suggest that the long-term foundations for this are established during the adolescent years, from 12 to 18 years (Kroger, 2007; Sawyer et al., 2018). Among the diverse educational activities adolescents might participate in, like sports, performing arts and media and art, this study identifies ME and EE as the most influential ones associated with entrepreneurial identity in adulthood.

**ME in adolescence and entrepreneurial identity**

Singing in a choir, playing a musical instrument or taking part in other activities in ME play a valuable role in the socio-emotional and intellectual-artistic domains of human development from early years (Campbell et al., 2007). Previous research has found that ME is consistently linked to favourable educational outcomes such as increased academic achievement (Cabanac et al., 2013; Southgate and Roseigno, 2009); higher university matriculation rates (Aschaffenburg and Maas, 1997; Marsh, 1992) and increased cognitive ability in both mathematics (Bilhartz et al., 2000) and language (Douglas and Willatts, 1994). As evidenced by research conducted among adolescents either enrolled into musical school programmes or not, music is a necessary component of their lives and a central aspect of their identities (Campbell et al., 2007).

Based on a number of previous studies on ME, the present research contends that, alongside its known influence on the identity formation of an adolescent (Campbell et al., 2007; Davis, 2005), ME may be specifically related to developing entrepreneurial identity. For instance, Hietanen and Ruismäki (2016) refer to ME as a medium for facilitating the development of entrepreneurship-related outcomes. They report increased levels of initiative, ability to cooperate, responsibility, creativity and risk-taking – characteristics commonly associated with entrepreneurial competencies (Bacigalupo et al., 2016). Systematic musical practice is also known to be related to improvisational thinking (Norgaard, 2011).

In the career life of an adult, entrepreneurship-related characteristics developed through early ME may reach beyond the music industry. Bennett (2008) surveyed professional musicians and found that only a few wanted to limit themselves to the music industry. Blackburn (2018) explained that such a stance might be driven by self-directed work, adaptability and openness to new possibilities. ME, as one of the facets of education in the creative industries, including in the field of art and design, places significant emphasis on the enhancement of self-representation skills and autonomy (Penaluna and Penaluna, 2009).

Music education is also an emotionally intensive activity, touching an array of senses but at the same time focused on disciplined, regular practice and sometimes involving accountability to peers in a band or choir (Burton et al., 2000; Hietanen and Ruismäki, 2016). Similarly, any entrepreneurial project or new endeavour is strongly intertwined with the personality of its initiator, is passion-driven and requires time investments and conscious commitment (Farmer et al., 2011; Murnieks et al., 2012).

These arguments and insights from previous research lead to the present study’s first hypothesis:

**H1:** Students who were actively engaged in ME during adolescence have a stronger entrepreneurial identity in adulthood.

**EE in adolescence and entrepreneurial identity**

The evidence in the literature on the impact of EE is ample though not always unidirectional, especially with regard to entrepreneurial intentions (Nabi et al., 2017). Intentions remain the most widespread measure of the impact of EE impact, followed by entrepreneurial competencies such as skills and attitudes (Kozlinska et al., 2020; Nabi et al., 2017). Relatively few authors have studied the interplay between EE and entrepreneurial identity – among them are Lundqvist et al. (2015), Donnellon et al. (2014) and Harmeling (2011). Notably, these authors approach this relationship from a qualitative or theoretical perspective, furthering our understanding of the EE classroom as an identity workplace.
Huber et al. (2014) ran a randomised field experiment and found that EE in early adolescence improved numerous self-assessed skills and attitudes, such as risk-taking, creativity, the need for achievement, self-efficacy, social orientation and proactivity. Yet, similar positive effects were not always observed in university student populations (e.g. Oosterbeek et al., 2010). In the period between secondary school and university, individuals can increase their relatedness to being entrepreneurial in various life contexts by applying the earlier developed competencies or experiencing elements of entrepreneurship in practice. Even if they have not encountered entrepreneurship outside educational settings, their perceptions or feelings of identification with some aspects of being entrepreneurial could have developed in other areas, such as project work, employment and leisure activities. Even though EE is one of the interventions most likely to foster entrepreneurial identity, this relationship has received scarce attention from researchers, especially within a longitudinal timeframe.

To address this gap, this study’s second hypothesis contends that:

**H2:** Students who receive EE during adolescence have a stronger entrepreneurial identity in adulthood.

**Complementarity between ME and EE**

Merriam (1964; in Campbell et al., 2007) viewed music as a universal behaviour. Similarly, entrepreneurship is now regarded as a generic type of behaviour pervasive in all contexts of life (Bacigalupo et al., 2016; Baron and Shane, 2008). On an equal footing with linguistic literacy in policy documents and at the top of the list of required skills in the 21st century (EU, 2006), it is hailed as a remedy for youth unemployment and structural economic issues. Consequently, educational policies across Europe prioritise the integration of EE at kindergarten, school and university. The costs of EE expansion continue to increase, including the cost of training teachers from various disciplines who have limited knowledge about entrepreneurship (Johansen and Schanke, 2013).

Music education has previously been found to develop an entrepreneurial approach and facilitate diverse learning in young adolescents (Hietanen, 2015). Entrepreneurial skills, Hietanen (2015) argued, should not be confined to business skills, but should also entail becoming a more cooperative, responsible and creative decision-maker. While students in specialised music studies tend to benefit from EE (Hietanen and Ruismäki, 2016) and holistically embrace such topics as value creation, being entrepreneurial, employability and career self-management (Schediwy et al., 2018), other students from diverse study backgrounds who have had ME may experience similar effects on entrepreneurship-related learning outcomes.

Making music is often a teamwork activity that forms around concerts, rehearsals, gigs, etc. (Mellor, 2011; Pavlicevic and Ansdell, 2004) and that mostly takes place among peers. The ability to create and work in teams is also a distinct characteristic of entrepreneurs (Mair et al., 2016), especially those concerned with social value creation. Making music is, essentially, creating a new tune or musical piece that did not previously exist. Similarly, entrepreneurship is often heralded as the ‘creation of something from nothing’ (Baker and Nelson, 2005: 329). What unites music and entrepreneurship is clearly new value creation, and in both cases this tends to occur through the work of teams, in which becoming entrepreneurial stems from interacting with this new value, along with the team’s diversity of role expectations (McGee et al., 2021; Lundqvist et al., 2015).

In view of ME and EE’s complementarity regarding entrepreneurial outcomes, ME could potentially serve as an addition or alternative to EE at secondary schools when it comes to stimulating self-identification with being entrepreneurial. Hence, the third hypothesis is:

**H3:** Music education moderates the effect of EE on entrepreneurial identity.

Figure 1 displays the study’s overall conceptual framework.

**Methodology**

**Data collection**

The sample comprises 190 Bachelor’s-level students from programmes in the social sciences, business and law, and arts and humanities in major universities in one European country. The students were purposefully sampled from different disciplinary backgrounds to ensure variation in their degree of relatedness to music and entrepreneurship. Social science and business and law students comprised 87% of the sample. Over 70% of them had been exposed to EE through lectures, seminars or practical assignments for gaining knowledge about running a business or being self-employed.

To construct the sample, the latest information (as of 2018) about tertiary education programmes was retrieved from the local Ministry of Education and Science. Focusing on the targeted study programmes, it was estimated that around 4500 individuals could be invited to take part in the survey. In spring 2019 the online survey initiations were sent to 4468 individuals (2782 females and 1686 males) through student offices and the official representatives of the universities delivering the programmes. The survey collected 295 responses, yielding a response rate of 6.6%, of which 238 responses were complete and 57 were partial.
During subsequent data cleaning, non-studying respondents, as well as the respondents who filled in the survey unreasonably quickly, were removed from the dataset. Responses from programmes other than the social sciences, business and law, and arts and humanities were also eliminated, since they were too heterogeneous and too few to be categorised for the statistical analysis. The final dataset used in the testing of the hypotheses comprised 190 responses.

The majority of students in the sample were studying in seven of the country’s leading universities, as shown in Table 1. The key reasons for choosing the university student population were as follows. First, students are well-positioned in terms of age; that is, they have passed adolescence but are close enough to recall related events. Second, following the skill-formation model (Cunha and Heckman, 2007), early educational investments grow and develop over time; this supports researching the association between adolescent educational events and identity in early adulthood. Researching university students also allows one to control for recently received ME and EE as possible confounding factors.

Measures

Dependent variables. Entrepreneurial identity was measured using Sellers et al.’s (1997) scales of identity centrality, modified to apply to the entrepreneurship context (CR = 0.86). This variable reflects conscious choice, thought and reflection (Murmiëks et al., 2012) about sense of self, self-image and sense of belonging among other entrepreneurial individuals, etc. In the original study, Sellers et al. (1997: 815) used the measure to study the centrality of racial identity. We replaced the words ‘being Black’ and ‘Black people’ with ‘being entrepreneurial’ and ‘other entrepreneurial people’ (e.g. ‘being entrepreneurial is important for my self-image’; ‘I see my future tied to other entrepreneurial people’). Adapting scales from other domains, even distant ones, is a valid practice in the literature. For instance, Murmiëks et al. (2012) measured entrepreneurial identity by modifying the scales of blood donors’ identity.

Independent variables. Involvement in ME and in EE was measured retrospectively for the adolescent period (that is, between grades 7 and 12 of secondary school, usually preceding university enrolment, when pupils are 12–18 years old).

Music education was a binary variable, with the value of ‘0’ meaning curricular ME received as part of the standardised secondary education; and the value of ‘1’ meaning extra-curricular ME (active involvement). The compulsory subject of music in secondary schools comprises learning music theory and history, singing and active listening (Hietanen and Ruismäki, 2016). In addition to the standard ME curriculum, some pupils engage in extra-curricular ME; that is, they attend specialised music schools, take private lessons and play in a band. In other words, they study music as an extra-curricular subject that is not credit-bearing in a secondary school. Extra-curricular ME includes solfeggio lessons, singing in a choir, playing musical instruments and sometimes experiments and improvisations (Hietanen and Ruismäki, 2016). The survey collected information about the length of engagement in ME expressed as the number of years.

Entrepreneurship education was also a binary variable, where ‘0’ denoted that a respondent had received no EE intervention, and ‘1’ denoted that a respondent had received EE intervention in a secondary school. Based on the national standards, EE in secondary schools was typically concerned with elements of entrepreneurship basics such as theoretical understanding of the concepts entrepreneurship and enterprise, and an analysis of employee and employer relations. It was taught as part of economics classes for beginners or, on rarer occasions, labelled as ‘Basics of Entrepreneurial Activity’. In either case, the purpose of EE

Figure 1. Conceptual framework of the study.

Table 1. Sample composition by university.

| University | Total | %  |
|------------|-------|----|
| A          | 99    | 52.1|
| B          | 31    | 16.3|
| C          | 23    | 12.1|
| D          | 15    | 7.9 |
| E          | 8     | 4.2 |
| F          | 7     | 3.7 |
| G          | 7     | 3.7 |
| Total      | 190   | 100%|

Figure 1. Conceptual framework of the study.

Table 1. Sample composition by university.
was to present individuals with opportunities to develop entrepreneurial competencies in order to take part in economic processes and build careers according to their own skills and economic situations at the time. The course content was delivered in a traditional lecturing style which included discussions and some group work. In addition, most pupils in the sample who had received EE had taken part in the Junior Achievement programme, which included practical tasks such as creating student enterprises.

Both EE and ME were characterised by participation schedules, direction by an adult leader, an emphasis on skill development and involvement that required sustained attention, opportunities for meaningful participation and clear feedback (Roth and Brooks-Gunn, 2003).

Control variables. An extensive, unified set of controls was used: gender, age, study programme, having entrepreneurial parents, being employed, the number of current and adolescent extra-curricular activities students were involved in, EE received in a university and current involvement in ME. Education-level controls, namely, entrepreneurial attitudes and motivations, were also part of the set. Basic demographic variables were included, following previous studies (e.g. Brändle et al., 2018; Falck et al., 2012). Involvement in extracurricular activities was controlled for because earlier accounts have found it to be associated with opportunities for growth and personal development (Eccles and Gootman, 2002; Larson, 2000) as well as identity formation among adolescents (Eccles et al., 2003). As part of a complementary analysis, involvement in other activities such as sports, student government, media and art, performing arts, science and research, was controlled for. Last but not least, the survey instrument included the variables of individual attitudes and motivation towards entrepreneurship as possible outcomes of EE (Nabi et al., 2017). Both variables were binary and were based on respondents’ perceptions of whether entrepreneurship courses had changed their attitudes towards entrepreneurship and self-employment, and their motivations to start their own businesses or become self-employed.

Before distributing the survey, it was tested on a sample of 10 participants. Feedback was retrieved from each respondent and a few adjustments were made to ensure the clarity of the questions and the precision of translation into the local language, and to improve the general flow of the survey. Sixty-five percent of respondents completed the survey in English.

The Appendix presents the full survey.

Findings

Method

The study’s conceptual framework was tested with OLS regressions. Due to some heteroscedasticity between independent and dependent variables, it was decided to use heteroscedasticity-robust standard errors. The outliers and potential multicollinearity issues were checked separately for each of the regression models.

Prior to running the analysis, by using partial responses that were excluded from the final sample we checked that non-response bias did not materially interfere with the results obtained. Slight differences were identified for two control variables: non-respondents were less likely to have parents who were either self-employed or engaged in entrepreneurship, and had a lower reported count of extra-curricular activities (current and adolescent). The other variables did not exhibit any significant differences between the full-response and partial-response groups.

To alleviate concerns about common method biases that arise when all variables are collected through self-reporting, we conducted the widely used Harman’s single factor test (Podsakoff et al., 2003). We found that 33.4% of the variance was shared among all variable items, which is well below the critical threshold of 50%.

Hypothesis testing results

The first regression model on entrepreneurial identity included all the specified controls and main predictors (ME and EE during adolescence) to test H1 and H2. The second model added the interaction effect, which represented ME moderating the relationship between EE and identity to test H3.

Table 2 presents descriptive statistics, and Table 3 shows the correlation matrix among the regression variables. Table 4 shows the results obtained.

Both ME and EE received during adolescence had significant positive direct effects on the strength of entrepreneurial identity, bringing support to H1 and H2. That said, it was the extra-curricular ME that generated the hypothesised effect. Additionally, ME moderated the relationship between EE and identity. Figure 2 plots this effect. If an individual received only curricular ME during adolescence, then EE received in secondary education increased the strength of entrepreneurial identity, as stipulated by H2. If an individual had extra-curricular ME and no EE during adolescence, ME effectively acted as a substitute for EE. If an individual had both extra-curricular ME and EE during adolescence, then entrepreneurial identity strengthened marginally compared to having extra-curricular ME and no EE. We can, therefore, also support H3.

The effects of control variables also show several noteworthy patterns. The number of extra-curricular activities students were involved in at the time of the survey had consistently positive associations with entrepreneurial identity. Male respondents tended to have stronger entrepreneurial identity than female respondents. Students of some universities scored higher on the dependent variable in comparison to University A, which served as a reference
group. Finally, entrepreneurial motivation was a significant variable influencing entrepreneurial identity in both models.

To check the robustness of the results, a number of extra tests were conducted. The first regression model was tested with dummy variables for each educational activity that respondents reported in the survey for both adolescent and current periods. Sports, performing arts, science and academia, student government, volunteering or media and art did not have any notable direct effects. A similar re-test of the second model yielded insignificant coefficients, with the exception of sports, whilst the earlier obtained results with respect to ME and EE held valid. Pursuing sports during adolescence strengthened the effect of adolescent EE on identity. If extra-curricular ME acted as a possible substitute for EE, sports education could be treated as complimentary to EE, such that the coupled effect of EE and sports on identity was stronger than the effect of EE alone.

Furthermore, we tested the regression models using another version of the adolescent ME variable expressed as the number of years of involvement in ME during adolescence. These regressions brought about identical results. With regard to the interaction effect between ME and EE, we found that, as the years of ME increased, so did the substitution effect for ‘no EE’ and the interaction effect with EE.

The results suggest that the effect of extra-curricular adolescent ME on the strength of entrepreneurial identity was robust.

**Discussion**

This study concludes that extra-curricular adolescent ME and adolescent EE are consistently related to entrepreneurial identity in adulthood. Furthermore, ME moderates the relationship between EE and identity. These findings make a number of important contributions to the EE and ME research, in particular to the identity development discourse in the entrepreneurship and general education literatures.

The study retrospectively connects the period between adolescence and adulthood to validate the positivistic view on identity formation in the entrepreneurship literature (Erikson, 1968; Waterman, 1982). In doing so, the study bridges the empirical gap in scholarly knowledge highlighting that the foundations for entrepreneurial identity development are laid in adolescence (Alsos et al., 2016; Kroger, 2007). From the perspective of the education sciences, the study provides evidence of learning transfer effects by establishing a link between adolescence, when an individual is particularly perceptive and apt to learn new things (languages, arts, sports or the like), and adulthood.
Table 3. Correlation matrix.

| Variable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|----------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|
| 1 Entrepreneurial identity | | | | | | | | | | | | | | | | | | | | |
| 2 Age | 0.06 | | | | | | | | | | | | | | | | | | |
| 3 Gender | -0.06 | -0.11 | | | | | | | | | | | | | | | | | |
| 4 Entrepreneurial parents | 0.13 | -0.02 | 0.07 | | | | | | | | | | | | | | | | |
| 5 Currently employed | 0.15* | 0.20** | -0.08 | 0.01 | | | | | | | | | | | | | | | |
| 6 EE during adolescence | 0.26** | 0.03 | -0.06 | 0.16* | -0.05 | | | | | | | | | | | | | | |
| 7 EE during tertiary education | 0.02 | -0.03 | -0.06 | 0.24*** | -0.02 | 0.37*** | | | | | | | | | | | | | |
| 8 Entrepreneurial attitude | 0.19** | -0.02 | 0.12 | 0.01 | -0.01 | -0.01 | -0.02 | | | | | | | | | | | | |
| 9 Entrepreneurial motivation | 0.37*** | -0.05 | 0.14 | 0.08 | 0.07 | 0.02 | 0.00 | 0.60*** | | | | | | | | | | | |
| 10 Number of extra-curricular activities during adolescence | 0.13 | -0.01 | 0.22** | 0.09 | -0.06 | 0.04 | 0.11 | 0.11 | 0.04 | | | | | | | | | | |
| 11 Number of current extra-curricular activities | 0.21** | -0.16* | -0.01 | 0.11 | -0.02 | 0.14 | 0.06 | 0.09 | 0.03 | 0.38*** | | | | | | | | | |
| 12 Studying in humanities programme | 0.02 | 0.09 | 0.16* | 0.05 | -0.05 | -0.10 | -0.26*** | 0.10 | 0.03 | 0.01 | -0.01 | | | | | | | | |
| 13 ME during adolescence | 0.30*** | 0.15* | 0.24*** | 0.11 | -0.01 | 0.11 | 0.02 | 0.22*** | 0.23** | 0.56*** | 0.17* | 0.11 | | | | | | | |
| 14 ME during tertiary education | 0.177* | 0.08 | 0.05 | -0.02 | 0.06 | 0.08 | -0.03 | 0.09 | 0.13 | 0.27*** | 0.44*** | 0.13 | 0.43*** | | | | | | |
| 15 University A | -0.26*** | -0.16* | -0.22** | -0.11 | -0.23** | 0.12 | 0.28*** | -0.17* | -0.18* | 0.06 | 0.04 | -0.38*** | -0.07 | -0.16* | | | | | | |
| 16 University B | 0.14* | -0.03 | 0.06 | 0.08 | 0.11 | -0.02 | 0.07 | 0.08 | 0.17* | -0.03 | -0.01 | -0.13 | 0.00 | 0.04 | -0.46*** | | | | |
| 17 University C | 0.03 | 0.21** | 0.11 | -0.08 | 0.08 | -0.18* | -0.43*** | -0.02 | -0.02 | -0.18* | -0.20** | 0.24*** | -0.03 | -0.07 | -0.39*** | -0.16* | | | |
| 18 University D | 0.03 | -0.03 | 0.13 | 0.10 | -0.04 | -0.09 | -0.16* | 0.09 | 0.04 | 0.07 | 0.09 | 0.75*** | 0.09 | 0.19** | -0.31*** | -0.13 | -0.11 | | |
| 19 University E | 0.12 | -0.05 | 0.05 | 0.05 | -0.09 | 0.15* | 0.12 | 0.19* | 0.13 | 0.00 | 0.00 | -0.08 | 0.05 | 0.05 | -0.22** | -0.09 | -0.08 | -0.06 | | |
| 20 University F | 0.10 | 0.05 | 0.03 | 0.09 | 0.22** | 0.06 | 0.04 | 0.04 | 0.10 | 0.06 | -0.08 | 0.08 | 0.15* | -0.20** | -0.09 | -0.07 | -0.06 | -0.04 | | |
| 21 University G | 0.08 | 0.18* | 0.03 | -0.03 | 0.22** | -0.05 | -0.07 | -0.03 | -0.07 | 0.01 | 0.06 | -0.08 | -0.04 | -0.01 | -0.20** | -0.09 | -0.07 | -0.06 | -0.04 | -0.04 | |

*p < 0.05, **p < 0.01, ***p < 0.001.
Table 4. Ordinary least squares regressions and moderation effects on entrepreneurial identity.

|                  | Model 1 DV: Entrepreneurial identity | Model 2 DV: Entrepreneurial identity |
|------------------|-------------------------------------|-------------------------------------|
| Independent variables | 3.081***                           | 3.237***                           |
| Control variables |                                     |                                     |
| Age              | −0.018                              | −0.025                              |
| Gender           | −0.469***                           | −0.472***                           |
| Entrepreneurial parents | 0.027                              | −0.037                              |
| Currently employed | 0.148                              | 0.096                               |
| EE during tertiary education | −0.016                              | −0.042                              |
| Current ME       | −0.322                              | −0.294                              |
| Number of extra-curricular activities during adolescence | −0.012                              | −0.007                              |
| Number of current extra-curricular activities | 0.188*                              | 0.172*                              |
| Studying in humanities programme | −0.228                              | −0.351                              |
| Entrepreneurial attitude | −0.092                              | −0.092                              |
| Entrepreneurial motivation | 0.308***                           | 0.293***                           |
| University B     | 0.583**                             | 0.588**                             |
| University C     | 0.788**                             | 0.823**                             |
| University D     | 0.706                               | 0.723                               |
| University E     | 0.686*                              | 0.687*                              |
| University F     | 0.594                               | 0.705                               |
| University G     | 0.930*                              | 0.882*                              |
| Main effects     |                                     |                                     |
| ME during adolescence | 0.659***                           | 1.012***                            |
| EE during adolescence | 0.488**                             | 0.817***                            |
| Moderation effect |                                     |                                     |
| ME x EE during adolescence |                                     | −0.787*                              |
| Model fit        |                                     |                                     |
| R²               | 0.352                               | 0.375                               |
| R² change        | 0.023                               |                                     |

Note: ME: music education; EE: entrepreneurship education.
Note: *** p < 0.001; ** p < 0.01; * p < 0.05. Significance levels are two-tailed. University A in controls is a reference group. N = 190.

Figure 2. Moderation effect of Music education.
A number of prior studies on arts education contend that the reason students demonstrate greater academic achievements, stronger critical thinking, creativity and imagination skills is that the human mind actively creates connections and associations across multiple intelligences, whereby learning from the arts transfers to other subjects (Baldwin and Ford, 1988; Burton et al., 2000). That said, it is possible that learning from other disciplines ‘travels back’ to the arts, and it is this dynamic, back-and-forth interaction that yields learning outcomes. In the context of this study, the interaction between ME and EE received in adolescence suggests that extra-curricular ME can be as influential for entrepreneurial identity in adulthood as EE. Hence, it is not just EE that can stimulate such identity. At the same time, it is not only extra-curricular ME or curricular EE that strengthens entrepreneurial identity, but also the sum of all the extra-curricular activities attended, as well as sports, in conjunction with EE. According to Burton et al. (2000), this kind of transfer effect from one field to another might occur when different fields share common cognitive elements, dispositions and ways of thinking – such as music and entrepreneurship (as outlined in the argumentation of the third hypothesis).

The identified effects tap into the prominent discussion in the adolescent education literature about the Eriksonian theory of lifelong identity development (Erikson, 1968; Kroger, 2007). Early accounts, starting with Erikson (1968), posit that identity is predominantly formed during adolescence and does not change much as an individual progresses into adulthood (Erikson, 1968; Waterman, 1982). More recent studies have posited that identity development is likely to be an ongoing ‘process of becoming’ (Alsos et al., 2016: 3; Burke, 2006). This study acknowledges both perspectives, but emphasises the validity of the early accounts and the positivistic view of identity development.

The relationship between adolescence and identity development over time has been the subject of previous research in education and psychology but, to the best of the authors’ knowledge, the present study is one of the first to explore this topic with respect to entrepreneurial identity. The topicality of the findings is in line with the agenda of EE policies and practices across Europe that aim to instil the spirit of entrepreneurialism at all levels of education (Bacigalupo et al., 2016; EU, 2006). Our study demonstrates that adolescent educational activities can influence entrepreneurial identity in adulthood. It identifies new associations highlighting the direct and moderating effects of ME, which add novel insights to the EE and ME research streams.

Entrepreneurial identity, unlike entrepreneurial intention, has remained surprisingly under-researched in the burgeoning stream of literature on EE impact and delivery (Nabi et al., 2017). Our study bridges this gap by testing educational enablers of entrepreneurial identity and complementing prior studies that advocate an understanding of the EE classroom as an identity workplace (Donnellon et al., 2014; Harmeling, 2011; Lundqvist et al., 2005). It is commonly expected that EE develops entrepreneurial competencies. Whilst the evidence on this outcome varies, depending, among other things, on the design of EE (Kozlinska et al., 2020; Oosterbeek et al., 2010), EE lays the foundations for identity development early on and its effects can emerge later, even if an individual does not become an entrepreneur or does not encounter entrepreneurship outside educational settings. The perception or feeling of identification with some aspects of being entrepreneurial may develop in other areas through learning transfer effects. By controlling for the entrepreneurial attitudes and motivations of individuals who felt that EE had an effect on these competencies, and by running several robustness checks or alternative research models, the analysis demonstrated that EE courses taken in adolescence have a strong direct association with entrepreneurial identity in adulthood.

The study’s findings also suggest extra-curricular adolescent ME as a potential alternative form of stimulating entrepreneurial identity that may serve as a way of saving costs on the integration of EE at lower education levels where there are limited or no resources for it. For practice, the interaction effect between ME and EE also suggests that in secondary schools where pupils study only curricular ME, EE courses or programmes might be beneficial. Another possible suggestion ensuing from this finding is the inclusion of musical practices, such as learning to play an instrument or singing in a choir, in standard secondary school curricula. In other words, it might not be enough simply to turn entrepreneurship-oriented people creative or creative specialists into entrepreneurship-oriented individuals as a generic solution; the findings suggest that the intensity (length of an intervention) and mode of exposure (curricular or extra-curricular) should be considered in the educational design (Penaluna and Penaluna, 2009).

Our study likewise contributes practical insights into ME research. While EE is of interest and benefit to music students, according to previous studies (Hietanen and Ruismäki, 2016; McGee et al., 2021; Schediwy et al., 2018), as far entrepreneurial identity is concerned, there seems to be no significant difference between running EE or not running it in specialised music schools or in schools where pupils engage extensively in ME, including musical instrument practice, improvisation or the like. This inter-relationship, however, should not be taken for granted with respect to commercial knowledge and other ‘hard’ aspects of entrepreneurship if a school aims at developing such competencies among students. Because representatives of creative professions generally lack intellectual property and selling skills (Haukka, 2011; Penaluna and Penaluna, 2009), they may still benefit from EE in this respect, contingent on...
its delivery (i.e. experiential, hands-on as opposed to merely informative) (McGee et al., 2021). Echoing prior studies, our findings simultaneously hint at treating music classrooms as entrepreneurial identity workplaces in order to support students in reflecting on different aspects of their identity (Harmeling, 2011; Lundqvist et al., 2015) and help resolve known dichotomies between the creative and commercial realms (Schediwy et al., 2018).

This study also contributes to the research on entrepreneurship by testing identity as a dependent variable. It expands existing scholarly knowledge wherein identity tends to be viewed as an explanatory variable, most often in relation to the antecedents of planned behaviour (self-efficacy, social norms and attitudes) (Alsos et al., 2016; Henry, 2013). Knowing more about potential enablers of entrepreneurial identity development directly informs the planning of educational programmes. In this research, we specifically touch upon the secondary education level, which is known to be foundational for adult life (Kroger, 2007).

It is necessary to acknowledge several limitations. First, this study’s cross-sectional design limits the ability to make causal claims beyond the association between phenomena. However, based on the theory and substantive background information, it is possible to make inferences about causal relationships. The data analysis includes a comprehensive set of control variables. The results of the regression models find positive, significant marginal effects of ME on the strength of entrepreneurial identity, confirmed by the robustness checks against other types of activities like sports and performing arts, thus suggesting a likely causal relationship. Further experimental and longitudinal studies could be conducted to verify this conclusion. Second, establishing stronger external validity of the findings would require research of a larger magnitude. The robustness checks conducted in the context of this study ensure the internal validity of the reported results.

As individuals build their decision-making, motivation, meaning and subsequent behaviour based on their identities (Murnieks et al., 2012; Stryker and Burke, 2000), the purposeful development of entrepreneurial identity through extra-curricular ME or EE in the early stages of life can help people deal with challenges they will face in adulthood. Yet, an individual can house many more identities than being an entrepreneur and a musician. Identity research for educational practices has further avenues to explore. Laying the foundations for the harmonious co-existence of various identities could be a future way forward in advancing the educational process in secondary schools. Raising and educating entrepreneurial individuals in any profession or discipline is a challenging long-term endeavour. This study sheds some light on ME and EE, yet this is but a fraction of the bigger picture of within- and between-identity relationships that call for an in-depth qualitative approach to advance scholarly understanding of entrepreneurial identity.

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Notes
1. The dataset was further validated by using information from the local Ministry of Education and Science on the number of males and females in each study programme and by making a comparison with the population distribution based on this demographic characteristic.
2. These variables were also pre-tested as mediators between EE, ME and identity but this approach did not prove valid, and we kept attitudes and motivations as controls in the analysis.

References
Alsos G, Høyvarde T, Hytti U, et al. (2016) Entrepreneurs’ social identity and the preference of causal and effectual behaviours in start-up processes. Entrepreneurship and Regional Development 28(3/4): 234–258.
Aschaffenburg K and Maas I (1997) Cultural and educational careers: the dynamics of social reproduction. American Sociological Review 62(4): 573–587.
Bacigalupo M, Kampylis P, Punie Y, et al. (2016) EntreComp: The Entrepreneurship Competence Framework. Luxembourg: Publications Office of the European Union.
Baldwin TT and Ford JK (1988) Transfer of training: A review and directions for future research. Personnel Psychology 41(1): 63–105.
Baron R and Shane S (2008) Entrepreneurship: A Process Perspective. Ohio: Thomson/South-Western, Mason.
Baker T and Nelson RE (2005) Creating something from nothing: resource construction through entrepreneurial bricolage. Administrative Science Quarterly 50: 329–366.

Bilhartz T, Bruhn R and Olson J (2000) The effect of early music training on child cognitive development. Journal of Applied Developmental Psychology 20(4): 615–636.

Blackburn A (2018) The gig economy is nothing new for musicians – here’s what their ‘portfolio careers’ can teach us. Available at: http://theconversation.com/the-gig-economy-is-nothing-new-for-musicians-heres-what-their-portfolio-careers-can-teach-us-98247.

Brindle L, Berger ESC, Golla S, et al. (2018) I am what I am - how nascent entrepreneurs’ social identity affects their entrepreneurial self-efficacy. Journal of Business Venturing Insights 9: 17–23.

Burke PJ (2006) Identity change. Social Psychology Quarterly 69(1): 81–96.

Burton JM, Horowitz R and Abeles H (2000) Learning in and through the arts: the question of transfer. Studies in Art Education 41(3): 228–257.

Cabacan A, Perlovsky L, Cabacan B, et al. (2013) Music and academic performance. Behavioural Brain Research 256: 257–260.

Campbell PS, Connell C and Beegle A (2007) Adolescents’ expressed meanings of music in and out of school. Journal of Research in Music Education 55(3): 220–236.

Cunha F and Heckman J (2007) The technology of skill formation. American Economic Review 97(2): 31–47.

Davis RA (2005) Music education and cultural identity. Educational Philosophy and Theory 37(1): 47–63.

Dekovic M and Meeus W (1997) Peer relations in adolescence: effects of parenting and adolescents’ self-concept. Journal of Adolescence 20: 163–176.

Donnellon A, Ollila S and Williams Middleton K (2014) Constructing entrepreneurial identity in entrepreneurship education. The International Journal of Management Education 12(3): 490–499.

Douglas S and Willatts P (1994) The relationship between musical ability and literacy skills. Journal of Research in Reading 17(2): 99–107.

Eccles J and Gootman J (eds), (2002). Community Programs to Promote Youth Development. Washington DC: National Academy.

Eccles JS, Barber BL, Stone M, et al. (2003) Extracurricular activities and adolescent development. Journal of Social Issues 59(4): 865–889.

Erikson E (1968) Identity, Youth, and Crisis. New York: Norton.

EU (2006) Recommendation of the european parliament and the council of 18 december 2006 on key competences for lifelong learning. Official Journal of the European Union 394: 10–18. L/10 of 30.12.2006.

Falck O, Hebbich S and Luedemann E (2012) Identity and entrepreneurship: do school peers shape entrepreneurial intentions? Small Business Economics 39(1): 39–59.

Farmer SM, Yao X and Kung–McIntyre K (2011) The behavioral impact of entrepreneur identity aspiration and prior entrepreneurial experience. Entrepreneurship Theory and Practice 35(2): 245–273.

Faucht E and Gruber M (2011) Darwinians, communitarians, and missionaries: the role of founder identity in entrepreneurship. Academy of Management Journal 54(5): 935–957.

Haukka S (2011) Education-to-work transitions of aspiring creatives. Cultural Trends 20(1): 41–64.

Harmeling SS (2011) Re-storying an entrepreneurial identity: education, experience and self-narrative. Education + Training 53(8/9): 741–749.

Henry C (2013) Entrepreneurship education in HE: are policy makers expecting too much? Education + Training 55(8/9): 836–848.

Hietanen L and Ruismäki H (2016) Awakening students’ entrepreneurial selves: case music in basic education. Education + Training 58(7/8): 832–848.

Hietanen L (2015) Entrepreneurial learning environments: supporting or hindering diverse learners? Education + Training 57(5): 512–531.

Huber LR, Sloop R and Van Praag M (2014) The effect of early entrepreneurship education: evidence from a field experiment. European Economic Review 72: 76–97.

Johansen V and Schanke T (2013) Entrepreneurship education in secondary education and training. Scandinavian Journal of Educational Research 57(4): 357–368.

Kozlinska I, Rebmann A and Mets T (2020) Entrepreneurial competencies and employment status of business graduates: the role of experiential entrepreneurship pedagogy. Journal of Small Business & Entrepreneurship. Available at: https://doi.org/10.1080/08276331.2020.1821159.

Kroger J (2007) Identity Development: Adolescence Through Adulthood. Thousand Oaks: California Sage Publications.

Kuratko DF (2005) The emergence of entrepreneurship education: development, trends, and challenges. Entrepreneurship Theory and Practice 29(5): 577–597.

Landsström H (2005) Pioneers in Entrepreneurship and Small Business Research. New York: Springer Science and Business Media.

Larson RW (2000) Toward a psychology of positive youth development. American Psychologist 55(1): 170–183.

Leitch C and Harrison R (2016) Identity, identity formation and identity work in entrepreneurship: conceptual developments and empirical applications. Entrepreneurship & Regional Development 28(3–4): 177–190.

Lundqvist M, Williams-Middleton K and Nowell P (2015) Entrepreneurial identity and role expectations in nascent entrepreneurship. Industry and Higher Education 29(5): 327–344.

Mair J, Wolf M and Seelos C (2016) Scaffolding: a process of transforming patterns of inequality in small-scale societies. Academy of Management Journal 59(6): 2021–2044.

Marsh HW (1992) Extracurricular activities: beneficial extension of the traditional curriculum or subversion of academic goals? Journal of Educational Psychology 84(4): 553–562.
McGee C, Schwartz N and Ehrlick S (2021) The music den: a framework for entrepreneurship education in a university start-up incubator. *Industry and Higher Education* 1–7: 360–366 (online first).

Mellor L (2011) What is ‘known’ in community music in higher education? Engagement, emotional learning and an ecology of ideas from the student perspective. *International Journal of Community Music* 4(3): 257–275.

Merriam A (1964) *The Anthropology of Music*. Chicago: Northwestern University Press.

Murnieks C, Mosakowski E and Cardon M (2012) Pathways of passion: identity centrality, passion, and behavior among entrepreneurs. *Journal of Management* 40(6): 583–1606.

Nabi G, Liñán F, Fayolle A, et al. (2017) The impact of entrepreneurship education in higher education: a systematic review and research agenda. *Academy of Management Learning & Education* 16(2): 277–299.

Nabi G, Holden R and Walmsley A (2010) From student to entrepreneur: towards a model of graduate entrepreneurial career-making. *Journal of Education and Work* 23(5): 89–415.

Norgaard M (2011) Descriptions of improvisational thinking by artist-level jazz musicians. *Journal of Research in Music Education* 59(2): 109–127.

Oosterbeek H, van Praag M and Ijsselstein A (2010) The impact of entrepreneurship education on entrepreneurship skills and motivation. *European Economic Review* 54(3): 442–454.

Pavlicevic M and Ansdell G (2004) *Community Music Therapy*. London: Jessica Kingsley Publishers.

Penaluna A and Penaluna K (2009) Creativity in business/business in creativity. *Industry and Higher Education* 23(3): 209–219.

Podsakoff P, MacKenzie S, Lee JY and Podsakoff N (2003) Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology* 88(5): 879–903.

QAA Quality Assurance Agency for Higher Education (2018) Enterprise and entrepreneurship education: guidance for UK higher education providers. Available at: https://www.qaa.ac.uk/docs/qaa/enhancement-and-development/enterprise-and-entrepreneurship-education-2018.pdf?sfvrsn=1f1f981_8.

Roth JL and Brooks-Gunn J (2003) What exactly is a youth development program? Answers from research and practice. *Applied Developmental Science* 7(2): 94–111.

Sawyer SM, Azzopardi PS, Wickremarathne D, et al. (2018) The age of adolescence. *The Lancet Child & Adolescent Health* 2(3): 223–228.

Schediwy L, Loots E and Bhansing P (2018) With their feet on the ground: a quantitative study of music students’ attitudes towards entrepreneurship education. *Journal of Education and Work* 31(7–8): 611–627.

Seikkula-Leino J (2011) The implementation of entrepreneurship education through curriculum reform in Finnish comprehensive schools. *Journal of Curriculum Studies* 43(1): 69–85.

Sellers RM, Rowley SAJ, Chavous TM, et al. (1997) Multidimensional inventory of black identity: a preliminary investigation of reliability and construct validity. *Journal of Personality and Social Psychology* 73(4): 805–815.

Sieger P, Gruber M, Fauchart E, et al. (2016) Measuring the social identity of entrepreneurs: scale development and international validation. *Journal of Business Venturing* 31(5): 542–572.

Southgate DE and Roscigno VJ (2009) The impact of music on childhood and adolescent achievement. *Social Science Quarterly* 90(1): 4–21.

Stryker S and Burke PJ (2000) The past, present, and future of an identity theory. *Social Psychology Quarterly* 63(4): 284–297.

Stryker S and Serpe RT (1994) Identity salience and psychological centrality: equivalent, overlapping, or complementary concepts? *Social Psychology Quarterly* 57: 16–35.

Waterman AS (1982) Identity development from adolescence to adulthood: an extension of theory and a review of research. *Developmental Psychology* 18(3): 341–358.

Wells LE (1978) Theories of deviance and the self-concept. *Social Psychology* 41: 189–204.