



Influence of school environment on adolescents' creative potential, motivation and well-being



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ARTICLE INFO

Article history:

Received 12 January 2015

Received in revised form 23 May 2015

Accepted 17 August 2015

Keywords:

Educational methods

Creativity

Motivation

Well-being

Adolescents

ABSTRACT

It is increasingly acknowledged that creativity has become essential in daily life. Each individual has the potential to be creative and the level of creativity actualization results from different factors that can be cognitive, conative and environmental. In particular, educational methods may impact creativity directly or indirectly through motivation and well-being. We hypothesized that the type of pedagogy influences levels of creativity, motivation and well-being. Furthermore, we hypothesized that creativity was linked to motivation and well-being. This study was conducted on 131 French adolescents attending a Waldorf school (alternative educational method) or a traditional school. Our results highlight differences in well-being and type of motivation when comparing both educational methods. Moreover, our results showed significant correlations between the different types of motivation and creativity scores.

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1. Introduction

The rapid evolution of society obliges individuals to adapt constantly. Flexibility and creativity give the possibility to cope with the numerous changes people may have to face during their lives. Creativity is considered to be a necessary component of the problem-solving process (e.g., Mumford, Mobley, Uhlman, Reiter-Palmon, & Doares, 1991), and creative ideation develops greater flexibility (e.g., Runco, 1986), hence fostering well-being (e.g., Carson, Bittner, Cameron, Brown, & Meyer, 1994). Creativity has not only been described as a reaction to changes and as means of coping with it (Shaw & Runco, 1994), but it has also been conceptualized as contributing to social and societal advances (Paulus & Nijstad, 2003).

The ability to cope with new situations can thus be acquired through the development of autonomy, self-confidence, motivation and creativity (Carson et al., 1994; Deci & Ryan, 2000; Russ, Robins, & Christiano, 1999; Shankland, Genolini, Riou França, Guelfi, & Ionescu, 2010). All the above factors may be enhanced or hindered by the individual's immediate environment, in particular by the family (Dusek & Danko, 1994; Kliewer & Lewis, 1995; McIntyre & Dusek, 1995; Ruchkin, Eisemann, & Hagglof, 1999) and educational settings (Lillard & Else-Quest, 2006; Mellou, 1996; Ogletree, 2000; Shankland, Riou França,

Genolini, Guelfi, & Ionescu, 2009). Mellou (1996) suggests that creativity may be nurtured through specific educational settings in three respects: the creative environment (material, classrooms...), creative programs and creative teachers or ways of teaching. These characteristics appear to be particularly present in alternative educational systems such as Montessori and Waldorf schools (e.g., Murdock, 2003; Rose, Jolley, & Charman, 2012; Shankland, 2008).

The term creativity is used in this article as the ability to produce novel, original work that fits within particular task or domain constraints (Amabile, 1996; Gardner, 1996; Lubart, Mouchiroud, Todjman, & Zenasni, 2003; Ochse, 1990; Runco & Jaeger, 2012; Sternberg & Lubart, 1995). According to Sternberg and Lubart (1995), creativity is a cognitive aptitude which requires a confluence of three distinct and interrelated resources: cognitive factors (such as intelligence, knowledge), conative factors (such as personality, motivation, emotion) and environmental context. According to Snow (1994), levels of ability development and patterns of ability differentiation may result from different types of educational systems. However, each individual's learning history is also unique because individuals perceive situations differently according to their own background and interests. Thus, children's creative performances can be influenced by their conative aptitude, by their learning environment, and by the interaction between these two variables. The learning environment may have an impact on creative performances through explicit creativity development, for example by enhancing pretend play and role play in children according to their age (e.g., Russ et al., 1999) and by scheduling arts classes – as it can be observed in Waldorf schools (Rose et al., 2012). Schools may also

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impact creativity indirectly through intrinsic motivation (Rathunde & Csikszentmihalyi, 2005) and well-being enhancement (Fredrickson, 2001).

1.1. Educational methods and creativity

The French traditional educational system is based on norms and rules that allow the class to remain as calm and structured as possible. Therefore, autonomy and risk taking are not emphasized, and pupils often remain passive. Memorization and theory applications are more practiced than integration or active thinking. Generally, teachers give exercises, which support the development of convergent thinking. There is usually one single right answer to the problem presented, leaving little room for divergent thinking. Moreover, creative thinking is rarely solicited except in arts classes. In addition, students are often in competition with one another. Therefore they cannot develop perseverance and intrinsic motivation, which are two important components of creative performances.

Alternative educational practices based on Freinet, Montessori or Waldorf pedagogical methods appear to be characterized by: (1) autonomy development, (2) active participation in knowledge and skills acquisition and integration (not only memorization), (3) development of intrinsic motivation through activity choices (students may choose specific projects they wish to work on), and reduced competition (absence of marks, cooperation...; Lillard & Else-Quest, 2006). According to Deci and Ryan (1985), autonomy-supportive and competence-focused educational methods meet students' fundamental psychological needs – feelings of autonomy, competence and relatedness – thereby increasing intrinsic motivation and well-being (Ryan & Deci, 2001). Through these pedagogical methods, both convergent and divergent thinking may be used, and learning is aimed at developing autonomy through the acquisition of skills and the development of psychosocial competencies rather than being mainly aimed at acquisition of knowledge (Kendall, 1992; Shankland et al., 2009; Shankland et al., 2010). Creative thinking is also particularly solicited through artistic activities – mainly in Waldorf (Steiner) schools – such as painting, modeling, sculpting and theater.

During the latter of the 20th century, several studies compared children's performances in traditional and in alternative educational systems. Horwitz (1979) conducted a literature review from the 1930s to the late 1970s. Globally, children who were exposed to alternative educational methods showed less cognitive rigidity, more nuanced and imaginative thinking; they took more initiatives, were more open, and less conventional. Nevertheless, children exposed to alternative education outperformed those in traditional classes.

Thomas and Berk (1981) conducted a literature review concerning the effects of different school environments on children's creativity, which also yielded inconclusive results. Their hypothesis was that the environment that best supports the development of creative performance is an intermediate one, neither too structured, nor too open or flexible. Their results highlighted a complex relation for the development of creativity, which is influenced by gender, type of educational system, and creativity type (verbal or figural). In particular, they found that (1) an intermediate environment best promoted creativity, and (2) that in general, boys were more creative than girls.

Ogletree (2000), citing Torrance (1976), also compared Waldorf and classical schools students' productions. Waldorf schools students showed greater creativity than traditional schools students (cited by Rose et al., 2012). These results may also be explained by the diversity of artistic classes proposed in Waldorf schools and autonomous creative exercises carried out by the students themselves at home (Shankland, 2008). For example, based on the classes given by the teachers, students have to create their own folder composed of the class contents, adding information they have looked up, and decorated by drawings aiming at illustrating the lesson or simply aiming at making their folder more agreeable to read. The higher levels of creativity may also be explained

by the fact that in these schools, parents are strongly recommended to restrict television use at home. As the number of hours watching television is correlated to reduced creativity (Christakis & Zimmerman, 2006), this constitutes a potential creativity factor in Waldorf students.

Another study comparing Montessori, Waldorf and classical school students (Cox & Rowlands, 2000) underlined that Waldorf students productions were more accurate (proportions, perspective), detailed and also imaginative than those of other pupils. Where differences were found between classical school and Montessori pupils, the Montessori children tended to do better than the others. More recently, Besançon and Lubart (2008) also studied the influence of educational methods on the development of children's creativity. Their results indicated that, in general, children attending alternative education systems (Montessori and Freinet in that study) obtained higher performances than children attending traditional schools. In what concerns the positive influence of alternative educational methods on creative development from year 1 to year 2, the results show that Montessori curriculum was associated with an overall increase in creativity, for all children whatever their initial creative ability levels. However, this was not observed for children in Freinet classes. This difference could be explained by the fact that the teaching staff varied in the schools in which some teachers used Freinet pedagogical practices, whereas other teachers only used classical methods. Thus, some children in year 2 had a teacher who used traditional methods. These variations across the two years of the study support the hypothesis concerning the influence of educational methods on creativity development.

1.2. Motivation

Little use is made in alternative schools of marks which would operate as rewards or punishments for students (Shankland et al., 2010). Hence this type of education should lead to higher levels of intrinsic motivation (Deci, Koestner, & Ryan, 1999; Deci, Koestner, & Ryan, 2001). Furthermore, Amabile (1982) showed that the use of rewards has a negative impact on child creativity. Meta-analyses also underlined that any type of reward and external incitation such as school assessments lead to reduced intrinsic motivation even for an activity considered by the students as interesting in the first place (Cameron & Pierce, 1994; Deci et al., 1999, 2001). As opposed to these types of educational methods, alternative schools support student autonomy and social relationships which enhance student engagement in school activities as they act upon factors which have a positive impact on intrinsic motivation (Deci & Ryan, 2000; Furrer & Skinner, 2003; Ryan, Stiller, & Lynch, 1994). Enhancing intrinsic motivation is all the more important as extrinsic motivation reduces creativity (Amabile, 1988; Cooper & Jayatilaka, 2006), while intrinsic motivation enhances creative performances (Jesus, Rus, Lens, & Imaginário, 2013). By focalizing individuals on activity results rather than on the activity itself – as does intrinsic motivation – extrinsic motivation may lead to reduced cognitive flexibility which encourages individuals to use specific algorithms which have proved to be efficacious in past experiences rather than to test more innovative solutions (Cooper & Jayatilaka, 2006).

1.3. Well-being

Alternative educational settings highlight the importance of student well-being at school. Since the definition of Subjective Well-Being (SWB) given by Diener, 1984, many research studies have been carried out on this subject. SWB is referred to as the experience of high levels of positive emotions, low levels of negative emotions, and a high level of satisfaction with life. In line with research studies on the impact of childrearing on well-being (Dusek & Danko, 1994; McIntyre & Dusek, 1995), researchers have suggested that alternative schools such as Steiner and Montessori show a similar pattern of education involving relatively high levels of responsiveness, as well as a high demand for age-appropriate behavior (Lillard & Else-Quest, 2006; Shankland et al.,

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