A NEURO-COGNITIVE VIEW ON WHAT MAKES AN EDUCATOR 'EFFECTIVE' IN NURTURING SOCIAL AND PERSONAL SKILLS

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Abstract
In democratic societies, education should follow a humanistic paradigm and pro-actively support the growth of social and personal skills (SPS) in learners of all ages. In this article, we present a literature review on the factors demonstrated in various educational fields as 'effective' in generating learning success – mostly conceptualized as improved academic achievement – and social and personal growth. Factors that appear across all fields are highlighted.

Next, neuro-cognitive literature on how we learn with our brain and our body is evaluated and the findings merged with those of the previous subchapters. Key features to 'successful' educational endeavours are presented, namely Emotions, Action, Cooperation, Reflection, Motivation and Practice. 'Neurologically smart' teaching then means to integrate these features as smooth and appropriate as possible into the individual educational context.

There is little research that focuses on educational effectiveness in regard to social and personal growth compared to (purely) academic achievement. Also, although the educator[1] is widely agreed upon to be one of the most crucial factors of impact on the learning outcomes, research addresses only managerial aspects of the educational process, and only marginally touches on intra-personal aspects such as emotional intelligence or leadership style in relation to the growth of SPS in learners. Further research in this area is recommended.

Key words: *effective teaching, educator, social skills, personal skills, neuro*

INTRODUCTION

To be effective and humanistic, education should be holistic and address the whole person and not just the brain through the acquisition of facts and knowledge. This stance was advocated already in ancient Greek and although it seems to have been forgotten in mainstream education over the centuries, it has been promoted throughout history by a string of social philosophers, such as Rousseau, Pestalozzi, and Dewey (1938). In the twentieth century, an educational approach that combines interactive, emotional and action-oriented or ‘hands-on’ learning settings has gained increasing recognition. Experiential Education is one of the terms commonly associated with it. By now, many European and other countries have adopted this approach for their institutionalized education, i.e. in school as well as community-based education, which is reflected in their national curricula and the PISA reports (OECD 2007).

1. WHAT ARE 'SOCIAL AND PERSONAL SKILLS'?

In the literature, different terms can be found, and different ways to cluster social and personal skills (SPS). For 'social and emotional learning' (Durlak et al. 2011; Priest & Gass 2005) or 'personal and social development' (Beames, Higgins and Nicol 2012). For this article, we prefer the term social and personal skills (SPS) as we refer to the outcome rather than the process (i.e. learning, growth or development).

[1] We use 'educator' as an umbrella term for facilitators, teachers, instructors, (outdoor) guides and other professionals engaged in delivering educational activities and content in the above mentioned spectrum of fields.

1.1. Social skills

Social skills (or inter-personal skills/competence (Hattie et al 1997), social competence, group-based or *We*-competence) summarize skills and abilities that are found within an individual and applied in the interaction with other individuals or an entire group (Süß, Weis &Seidel 2005; Priest & Gass 2005, 20; Ewert & Sibthorp 2014, 125ff.). Prominent examples are

- Effective communication skills
- Cooperation
- Trust
- Constructive conflict management
- (Positive) leadership

1.2. Personal skills

Personal skills (also referred to as intra-personal, Humane, self- or *I*-competence) combine skills and abilities mostly directed at the individual and his/her way to experience, interpret, adjust to and navigate successfully in their surroundings. Development of personal skills „occurs primarily through unobservable mental changes in participants'psyches" (Ewert & Sibthorp 2014, 131).

The list of examples varies across the authors, but commonly includes

- Perseverance and frustration tolerance
- Effective problem-solving strategies
- Improved self-concept (e.g. awareness, acceptance and stretching of ones boundaries)
- Reflective thinking
- Realistic risk assessment

(ibid; Priest & Gass 2005, 19). Needless to say, there is an overlap between these two areas, especially since all social skills are based not between but in the individuals, while most personal skills are refined through shared experiences and social feedback.

1.3. Skills, abilities, competence

A few thoughts should be addressed to the terminology used in this context to avoid misconceptions. We have chosen the terms social and personal *skills*, since these are the ones we feel are most commonly used in everyday language as umbrella terms for the intended concept. However, in more technical terms and psychological literature, *skills* denominate very defined and tangible performance tasks that can be easily described and automated (Süß, Weis & Seidel 2005, 351). The above mentioned improved self-concept would thereby not classify as a skill, since a concept is merely an interior image without a practical behavioural aspect as such.

There is also a hierarchical structure among these linguistic constructs that works as follows:

- *Skills*. Very defined and tangible performance tasks that can be easily described and automated.
- *Abilities*. A set of skills that is used interactively with some degree of transferability and ____.
- *Competence*. Highest order of complexity, where various resources to master complex tasks. It includes knowledge, abilities, attitudes and values.

(OECD 2007; Weinert 2001; Gaede 2007, 303; Süß, Weis &Seidel 2005, 350f.; Richter 1995, 33)

All of these include cognitive processes with behavioural aspects, which distinguishes them clearly from *knowledge* as a purely mental feature.

This seems paradox to what we listed above as social and personal skills. These are far from being concrete and confined, but align much rather with the complexity level of a competence. This is due to the fact that everyday laymen communication varies from the particular definitions developed in the social sciences through extensive research that scrutiny and compare and contrasts details with ever increasing magnifying glasses.

It is noteworthy that these terms have different meanings and connotations in different languages. In the German language, for example, where a lot of literature on Experiential Education is published, *Sozial-* and *Personalkompetenz* is used much rather than *Soziale Fertigkeiten*, which would be the literal equivalent to social skills (Heckmair & Michl 2008). Nevertheless, the general concepts are strongly related to SPS in English.

Anyway, in real life scenarios, the lines between skills, abilities and competences are often indistinguishable due to the multifactorial nature of educational situations and the unobservable internal processes within the learners. Some sources therefore use these terms with overlapping meanings and even synonymously (Kaufhold 2006, 111).

For the current discussion, we are interested in the complex changes in emotions, behaviours, perceptions and interpretations of our surrounding that constitute the growth of SPS – no matter under which label they appear. As mentioned above, we chose the term *skills* merely because it is the one most commonly used in this context. And having clarified the connotations and risks for misconceptions, we will now close this excursion.

One further note however on the conglomeration of SPS: Social *and* personal skills are often mentioned and addressed jointly because many programs evaluated have been demonstrated to promote more or less both areas – with individual differences depending on focus, method and other factors of the program (Durlak, Weissberg, Dymnicki, Taylor & Schellinger 2011).

2. FACTORS FOR EFFECTIVENESS IN VARIOUS EDUCATIONAL FIELDS

Which are the factors that have the strongest positive impact on the development of SPS in learners? To identify these, it seems advisable to draw together some relevant literature from the various educational fields that aims – maybe among other objectives – at personal and social growth. Here are some of the major ones:

- Class room teaching
- School-based programs
- Community programs
- Outdoor and Adventure Education
- Psychotherapy

This list does not claim to be concluding. As is obvious from their context, some of these fields have additional objectives (e.g. subject matter in classroom teaching) and some focus on a narrow slice of the SPS cake (e.g. frustration tolerance and temper management in violence prevention programmes). Yet they all have as common denominator SPS as a clear and defined objective. So in the following subsections, we will review some of the literature available in these fields to create a multi-lateral view on the factors and findings that have been demonstrated to make educational efforts in these areas ‘effective’. Effectiveness, notably, is in many cases viewed with regard to knowledge and hard skill acquisition. As far as available, we selected publications regarding SPS. Also, wherever possible, meta-analyses were reviewed to combine as many primary sources as possible. Unfortunately, this results in some sources being somewhat of age, and we try to complement them with up to date studies for a rounded-off view.

2.1. Class room teaching

A vast body of literature and research is directed at the topic of 'effective' teaching and teachers. In most cases however, 'effective' is measured by the growth of knowledge or subject-related competence of the students (e.g., Yon, Burnap & Kohut 2002; Harris 1998; Tuckman 1995). However, at least since PISA, all class room education – and thereby teaching – should at least implicitly advance socio-emotional as well as academic growth.

Harris (1998) produced a concise summary of the prevailing literature – up to 1997 – on effective teaching and categorizes the findings in (a) teaching behaviours and skills ('teaching effects'), (b) teaching styles and models, and (c) 'artistry' (with reference to Hopkins et al. 1997 for this format and terminology). Their distinction is supported with good arguments and worth taking a closer look at. For this text, we will have to restrict ourselves to the main factors identified to lead to effective teaching, i.e.

- Being clear and explicit about the learning objectives
- Being well prepared and knowledgeable in the subject matter
- Structuring lessons and activities well
- Acting student-centred (e.g. adapting teaching to their needs; initiate activities of appropriate difficulty and nature, suitable for individual achievement level; anticipate misconceptions)
- Offering regular and appropriate feedback to students on their progress
- Providing ample opportunities to practise
- Having a variety of teaching styles (e.g., traditional vs. progressive (see also Dewey 1938)) and models (e.g., prioritizing on information processing, social learning, individual growth, or behavioural change) at their command and implementing them flexibly according to the context
- Reflecting on one's teaching practice

This article is giving a comprehensive view on the managerial skills required for effective teaching. What it does not touch on at all are aspects related to emotional intelligence and the inter-social relationships. This might be due to the publication date and the literature reviewed. The past years – and decades – have brought about a clear change of educational paradigm that is reflected in more recent studies. For example, Walker (2008) identifies twelve characteristics of teachers that "made the most significant impact on their [former students] lives" (ibid. 61). Obviously, this is quite a vague measure for effectiveness, and the methodology employed in this report is obscure and of low scientific rigor. Nevertheless, his thoughts may have some practical validity, so with this caveat, teachers can be considered effective if they

- come to class prepared,
- are positive, fair, creative, compassionate and forgiving,
- hold high expectations of their students,
- cultivate a sense of belonging, respect students,
- display a personal touch, admit own mistakes, and have a sense of humour (ibid.).

Singh et al (2013) conducted both a literature review and a survey among faculty on effective teaching in the medical field. Omitting the purely medicine related findings, they report that “the top three desirable qualities of an effective teacher (…) were knowledge of subject, enthusiasm and communication skills” (p.1). Length of teaching experience was also positively correlated with teaching quality. There is no explanation provided on their conception of effectiveness.

As mentioned above, this list is comprised from studies with a main interest in effectiveness towards academic achievement and directed towards learners of different ages (from primary school to higher education).

2.2. School-based programmes

Durlak and colleagues have investigated the relevant factors of school-based (Durlak et al. 2011) as well as after-school (Durlak, Weissberg & Pachan 2010) programs directed to enhance SPS in youth. Both studies are meta-analyses combining a vast number of research reports (213 and 75, respectively). They found that "compared to controls, students demonstrated enhanced SEL [social and emotional learning] skills, attitudes, and positive social behaviors following intervention, and also demonstrated fewer conduct problems and had lower levels of emotional distress. Especially noteworthy from an educational policy perspective, academic performance was significantly improved" (Durlak et al. 2011, 412-413.) through universal interventions – 'universal' i.e. for the entire student body and not just selected classes or 'at risk' groups (ibid., 407). These are the factors Durlak and colleagues identified as contributing to the effectiveness of during- and after-school programs:

- Applying preferably all of the following four implementation factors they combined under the acronym SAFE:
- S – Sequenced. "new behaviors and more complicated skills usually need to be broken down into smaller steps and sequentially mastered, suggesting the benefit of a coordinated sequence of activities that links the learning steps and provides youth with opportunities to connect these steps"
- A – Active forms of learning. Students are allowed and encouraged to interact directly with the material, and opportunities for practice are provided.
- F – Focus. Specific time and attention is devoted to developing specific skills.
- E – Explicit. Learning outcomes are clearly defined and made explicit, so the learners are aware of what they are supposed to learn.
- In general, programs that run smoothly yield more significant outcomes than those encountering implementation problems (Durlak et al. 2011)

And on a side note: SAFE programs yielded distinctly stronger improvement in academic test scores than primarily academically-oriented programs (Durlak, Weissberg & Pachan 2010; CASEL 2005).

The mean effect size of students' *academic* performance improved significantly only where the intervention was conducted by school personnel as opposed to external experts (Durlak et al. 2011)

The reports used in Durlak, Weissberg & Pachans' (2010)_meta-analysis were all conducted in the USA. Durlak et al (2011) do not provide information on the geographical scope of their analysis.

2.3. Community programmes

The National Research Council and the Institute of Medicine (2004) have composed a report on the contribution of a variety of community programmes on the health and well-being of adolescents in the USA. The programmes that were investigated included after-school clubs, scout groups, community service activities, religious groups and others. Through an extensive literature review, the authors identified a set of features that work synergetic and "expand the opportunities for youth to acquire personal and social assets" (National Academy of Sciences 2004, 8). These are:

- Physical and psychological safety
- Appropriate structure
- Supportive relationships
- Opportunities to belong
- Positive social norms
- Support for efficacy and mattering (ibid, 9).

2.4. Outdoor and Adventure Education

Outdoor and Adventure Education commonly denotes programmes with a strong expeditionary nature, in which newly formed groups of (possibly young) adults perform highly challenging wilderness-based sports and challenges, such as backcountry hikes or survival techniques. The programmes are usually two to four weeks in duration and may or may not have a follow-up procedure to integrate achieved changes into the participants' everyday lives (Hattie et al. 1997; Ewert & Sibthorp 2014; Priest & Gass 2005).

Hattie et al. (1997) conducted a meta-analysis of 96 studies on the outcome of OAE programs for adults (including university students). Although this report is somewhat dated by now, it is still the most compound of its type unto this day. The studies chosen for their meta-analysis investigated OAE programmes in the USA and Australia.

Another meta-analysis focused on programmes for adolescents and produced similar findings (Cason and Gillis 1994), which were also supported by other authors (Ewert & Sibthorp 2014; Wilson and Lipsey 2000; Hans 2000; Rehm 1999. Here a summary of the main factors that evolved (abbreviation of sources in brackets: Hattie et al 1997 → H97; Ewert & Sibthorp 2014 → ES14; Cason & Gillis 1994 → CG94).

- Length of programme. Longer programmes (longer than 20 days) produced greater effects than shorter ones (H97; CG94)
- Physical, mental and psycho-social challenges, usually in and through a wilderness setting (ES14; H97)
- Active, experiential learning (ES14)
- A peer group of learners with a growing sense of cohesion (H97)
- Competent leaders / facilitators (ES14) with a humanistic style of instruction (H97)
- Self-reflection, supported by feedback from the group, the leader and in form of consequences from Nature (H97)

Interestingly, in the field of Outdoor Adventure Education, which is primarily aiming to increase SPS in participants, there is an unusually high interest in 'effective leadership' and the skills and characteristics required of a facilitator. Priest and Gass (2005) offer a review on a selection of research reports and deduct twelve core competencies. Some of them are in response to the intense and prolonged exposure to wilderness which does not apply to most other educational fields. The generally applicable ones are:

- Technical skills
- Organizational skills
- Facilitation skills
- Flexible leadership style
- Effective communication
- Professional ethics

Other authors use different terminology and categories but generally agree (Ewert & Sibthorp 2014; Martin, Cashel, Wagstaff & Breunig 2006). Hattie et al. (1997) add that facilitators with more course and life experience yielded the best results, which might indicate that effective education is a competence that tends to increase when practiced and refined over a prolonged period of time.

2.5. Psychotherapy

Psychotherapy is not necessarily directed towards a general growth of SPS and may often focus on very specific behaviours or issues. We are only presenting literature here that seems relevant to our current topic.

General factors for therapeutical success have been

Investigated for decades and can be summarized in these four categories (summarized by Lambert & Barley 2001):

- Extra-therapeutic factors (e.g., spontaneous remission, social support)
- Expectancy (including placebo effect)
- Specific therapy techniques (e.g. biofeedback, hypnosis, desensitization)
- Common factors (i.e. variables found across most therapies)

In regard to the impact of the educator – or more appropriately in this field, the *therapist* –, Lambert and Barley (2001) draw together over 100 reports and meta-analyses and find that clients tend to associate positive therapy outcome with personal attributes of their therapists. In particular, they list the following variables and behaviours that have "consistently shown to have a positive impact on treatment outcome" (p.358):

- Therapists that are warm, attentive, interested, understanding, respectful, credible, skilled, empathic, and affirmative of the patient.
- Therapists who focus on the client's issues and exhibit an ability to engage him/her into the process and direct his/her attention to the affective experience.

Partially overlapping with these findings, the concept of *alliance* between clients and their therapists has received particular scientific attention.

"The alliance refers to the quality and strength of the collaborative relationship between client and therapist in therapy. This concept is inclusive of: The positive affective bonds between client and therapist, such as mutual trust, liking, respect, and caring. Alliance also encompasses (…) consensus about, and active commitment to, the goals of therapy and to the means by which these goals can be reached. Alliance involves a sense of partnership (…) in which each participant is actively committed to their specific and appropriate responsibilities" (Horvath 2001, 365).

Horvath (2001) conducted a literature review and meta-analysis on 90 clinical study reports, evaluated the data for intra-personal moderator variables in the therapists, and identifies the following:

- Quality of communication skills (the ability to convey understanding; respect of the client's subjective views)
- Empathy, openness, and exploration (communicated empathy; flexibility; letting the client take responsibility and ownership of the therapeutical process)
- Experience and training were mentioned as factors, although different studies produce contradictory results on this aspect.

The therapist's personality and intrapersonal processes were also indicated to have a crucial effect on the therapy outcome. However, "studies exploring the relationship between the therapist's personal qualities (…) and alliance are just beginning to appear in the literature (…). The evidence from these studies has yet to converge meaningfully" (Horvath 2001, 369).

In a more recent study, Falkenström, Granström and Holmqvist (2013) were able to show that an improvement of alliance predicts lower symptoms for the next therapeutical session – although there was also some evidence for an interrelation between decreasing symptoms and growing alliance.

Horvath concludes that over 50% of the positive effects of psychotherapy are related to the quality of the alliance (2001, 366). A positive matching, complementarity and collaboration between therapist and client are among the strongest factors. And Lambert and Barley (2001) stress further that "decades of research consistently demonstrate that relationship factors correlate more highly with client outcome than do specialized treatment techniques" (p. 359).

Although the term alliance is most commonly used in the context of psychotherapy, it can be argued that it is "an important ingredient in *all* helping relationships" (Horvath 2001, 366; italics i.o.).

2.8. Summing up

For this article, we are not interested in exploring which of these measures might be *more* effective than others in regard to specific outcomes or contexts. There are some references and conclusions on that in the reviewed literature (e.g. Hattie et al. 1997, p. 70), and interested readers are kindly asked to consult these sources.

Among the lists of factors reported to have a direct positive influence on the growth of SPS, some seem to be consistent across the fields of educational services. In essence, these are

- A clear and planned structure of the educational situation
- Explicitly and directly addressed learning objectives
- A supportive and positive social climate (within the group and/or between educator and learner)
- A well prepared educator with a positive attitude towards the subject, the objectives and the learners
- A degree of responsibility and ownership being bestowed upon the learner
- Opportunity for practise to internalise and master skills and new behaviours

Not in all fields has the educator and their distinct means and degree of impact been subject to scientific scrutiny. However, where this has been done, there is a general consensus that he is one of the most crucial factors of influence in nurturing SPS (e.g., Ewert & Sibthorp 2014; Horvath 2001; Lambert & Barley 2001; Rehm 1999; Hattie et al 1997).

Yet "most studies merely list rather than evaluate sets of desirable attributes. This is among the most under-researched and critical areas for future study" (Hattie et al (1997, p.73). One reason for this could be that it is difficult to distinguish between intra-personal variables (e.g., personality attributes, leadership style, emotional intelligence), facilitative conditions (empathy, warmth, congruence), and the educational relationship or *alliance*. "These concepts are not mutually exclusive or distinct, but are interdependent and overlapping" (Lambert & Barley 2001, 358).

Also, too little information on ethnic background, gender, age and other person-related details were provided by most studies to draw conclusions from that, and future research should be directed at exploring the moderating effect of such variables.

3. THE NEURO-COGNITIVE SIDE TO IT

3.1. How the brain and body 'learn'

The processes of learning in general are well documented in terms of how our brains perceive, evaluate and retain new knowledge (Spitzer 2006; Heckmair & Michl 2013, 2008; LeDoux 2006; and others).

Due to evolutionary and physiogenetical reasons, the most crucial decisions in prioritizing, shelving and triggering responses are conducted by areas and 'routes' of the brain that bypass and outrun our consciousness (LeDoux 2006; Spitzer 2006). Much stronger for learning than our will and awareness are our emotions and their neuro-physical representations, which have received growing attention in

the literature and research over the past decades, Popular scientific publications like Daniel Goleman's best seller "Emotional Intelligence" (1996) have raised public awareness way beyond the ivory tower academe. While the studies are complex, the findings are simple and confound, and fortify much of what educational intuition has built on all along: Subject matter that has some form of emotional content or context is remembered much faster and sustainable than items or content without such emotional colouring (Sosic-Vasic et al. JAHR; Erk et al. 2003; Roth 2001, 274f.; Schleich 2003). Noteworthy, only positive emotions enable creativity, transferring and linking-up to existing memories, and other processes we think of as educationally desirable, whereas negative emotions and in particular fear only lead to averse learning, i.e. what we do *not* want to do or access, which is quite inhibiting and even paralyzing (Spitzer 2006, 161) – it might be known by some in the form of test anxiety – and counterproductive to a competence-oriented paradigm to education. Such positive emotions can be created through a warm social climate among the group of learners and the teacher, an interest in the subject matter, a safe and supportive environment, and other factors.

Because the mentioned neuro-cognitive mechanisms are rooted in the most archaic regions of our brain, it is very difficult to access, let alone control the dominance of emotions on our mental activities. Feedback from others, self-reflection and continuous practice are the factors that can lead to this ability, as has been demonstrated in neuro-imaging of Buddhist monks (Begley 2007, 379ff.).

Next to emotions, another crucial factor for learning success is systematic body movement. Experiments with mice, for example, showed that physical exercise improved learning processes and the transition from short term to long term memory (Begley 2007, 113). And Kiefer and Trumpp (2012) demonstrate that even the most complex concepts are acquired through our senses and that there is a strong 'embodiment' of what we know and think.

People who enjoy sport will have experienced the positive effects of physical exercise on our immediate mood and status of well-being. The phenomenon of a 'runner's high' is due to an increased emission of neurotransmitters such as Noradrenalin, Dopamine and Serotonin upon raised body movement. What is less well known is that cooperative behaviours also induce this chemical reward mechanism (Damasio 2005, 178) which will in a – simplified – behavioural stimulus-response-loop promote an inclination to increase pro-social behaviours and a refinement of SPS. Altruistic choices of action as well as social punishment of anti-cooperative behaviours have their roots in evolutionary (and unconscious) survival strategies of tribes and are programmed into the brains of mammals (Spitzer 2006, pp. 294ff.; Heckmair & Michl 2008) and also work towards the growth of social skills.

3.2. Teaching 'neurologically smart'

In a simple way, we could postulate that the above principled merely need to be applied in practise to teach 'neurologically smart', i.e. in a way that is most sensitive to the way our brain develops its hard ware (neurons and nerves), acquires, processes and stores new input, and reaches a level of automatization and mastery of skills. In summary, these principles are:

- *Emotions.* A positive emotional context allows for better memory retention, creativity, linking of knowledge and transfer.
- *Movement/Action.* Learning in a physically active and thereby multisensory way helps to remember, integrate and develop the subject matter further.
- *Cooperation*. Social interaction and cooperation are inherent to our species and provide a reward system for positive development, i.e. learning success.
- *Reflection*. Feedback from others and self-reflection help us to conceptualize our sensory intake, and also to regulate the emotional filters our brain applies to learning.

Other factors such as *Motivation* and *Practice* are important on a wider perspective (Sosic-Vasic et al JAHR).

3.3. Intra-personal factors in the educator

In comparison to the vast amount on attention and research directed at the neuro-cognitive processes involved in learning, what is hardly investigated are the relevant intra-personal aspects of the educator that promote these factors in general and particularly in regard with PSD in their subjects.

Since educational contexts in general and individual learning situations in particular are so multi-factorial, no direct causal relationship between intrapersonal factors in the educator and a singular learning outcome in the student can be established and scientifically demonstrated. Consequently, different sources and sets of data will have to be combined and searched for correlations. Namely, this could be psychometric measures and questionnaires for the educators' intra-personal profile (emotional intelligence, leadership style, etc.) on the one hand and self-report on or external evaluation of a learning increase, e.g. in pro-social behaviour, on the participants' side. The University of Edinburgh, Scotland, is currently conducting such an investigation (Hildmann, in prep), but much research and development will have to be devoted to this topic before concise evaluation techniques will be easily available to evaluation and training purposes for educational institutions as well as individuals prone on continuous professional development. In the meantime, educators will have to resort the conclusions from the above literature to facilitate learning and growth in their learners in the best possible way.

CONCLUSION

Promoting SPS in individuals of all ages is an essential objective of institutionalized education, and a public duty of any humanitarian nation. There is good evidence and advice on which factors strongly support social and personal growth across educational fields. In support of these, neuro-cognitive findings can be drawn together to highlight four main factors that nurture academic and socio-emotional growth in learners: a positive emotional context, cooperative tasks, opportunities for bodily engagement with the subject matter, and structured feedback and reflection. Motivation, practice and others need also be mentioned.

This advocates educational approaches that combine social learning situations with challenging tasks that can be completed in a hands-on fashion, such as Experiential and Adventure Education, which have also been demonstrated to be particularly apt in promoting SPS.

As it is widely accepted that the educator plays an important part in managing the success factors identified above, more research should be addressed to investigate the dynamics of this gate keeping further. In addition, some factors inherent in the educator as an individual appear to be crucial but have received little scientific attention in the past.

And finally, considering the vast amount of literature covering effectiveness in terms of academic improvement in students, more research could be directed at 'effective teaching' in respect to social and personal skills, to catch up with the political developments in the educational sector and modernized and competence-oriented school curricula.

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