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Successful schooling for pupils with intellectual disabilities: the demand for a new paradigm

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ABSTRACT

A comprehensive review of educational interventions for pupils with intellectual disabilities showed that most studies report positive results for a variety of interventions. The aim of this article is to explore how these results can be understood. We draw on similar earlier findings concerning intervention effects in psychotherapy and social work, discussing the so-called Dodo bird conjecture, indicating that established methods for identification of evidence-based practices can provide false, positive results influenced by so-called common factors present in most interventions. In conclusion, we argue for a new paradigm of research on educational interventions for pupils with intellectual disabilities, replacing the present ambition to find evidence-based support for specific interventions in favour of a line of research exploring alternative explanations in terms of, for instance, common positive factors.

Introduction

The growing literature on school effects for pupils with intellectual disabilities is most welcome as it provides an important basis for decisions concerning school organisation, teaching and teacher education. During the last decades, an increasing number of so-called evidence-based practices have been identified. From a general point of view, evidence-based practices refer to specific school practices that have been determined to be effective on the basis of a sufficient body of high-quality empirical research (Odom et al. 2005; Hudson, Browder, and Wood 2013).

An important aim of the studies of evidence-based practices is to provide guidelines for good practice in schools, medicine, social work, etc. Studies with randomised-controlled designs are often talked about as the golden standard in the sense that they are supposed to provide the best guidelines. These designs include, apart from an evaluation of effects of a specific intervention, also comparisons with a control group where the participants are randomly allocated to the two groups. A strong design is also supposed to be blind, in the sense that neither the researcher nor the participants know if they get the specific intervention or belong to the control group. The Cochrane reviews, focusing first of all on

evidence-based health care research, publish the most well-known reviews of such rigorous studies, but we have not found any such overviews of successful schooling for intellectually disabled pupils.

Most studies of successful schooling do not fulfil the golden standard criteria. A lot of research in the field of special education has adopted a single case design and Horner et al. (2005) have described a frequently used set of quality indicators and guidelines for the evaluation of such research. A large majority of the studies evaluate the results of just one specific intervention. Hudson, Browder, and Wood (2013) concludes that there usually seems to be two ways to approach a review of evidence-based practices. The first is to identity an interesting practice and evaluate the quality and quantity of research to support it. The second is to identify a desired outcome and go through the existing literature trying to find practices that have proved to yield this outcome. In addition to this there are also a large number of studies that report what could be called 'practice based evidence' concerning successful schooling of pupils with, for instance, intellectual disabilities. Usually, these studies are excluded in guidelines for good practices not fulfilling the golden standard. The term 'practice-based evidence' is used, for example, in psychotherapy research evaluating the effectiveness of psychological therapies in 'usual service-conditions' (Department of Health 1999). Lucock et al. (2003) argues for the value of practice-based evidence:

> Effectiveness research in routine clinical settings is an example of "practice-based evidence" (Barkhem and Mellor-Clarke 2000) and is important to complement the so-called gold standard randomized controlled trials (RCTs). RCTs have good internal validity, but tend to lack external validity when applied to the complexities of normal service delivery and to individual client's responses to treatment. (Lucock et al. 2003, 389)

In conclusion: if we look at the existing literature within the field there seems to be great variations and considerable unclearness concerning the exact meaning of the best practices. Often, it just seems to refer to the fact that a specific intervention is supported by some kind of study.

On a national level, the increased interest in securing that all pupils meet national expectations has increased the demand for overviews and recommendations about best practices that promote students' learning. This interest includes pupils with intellectual disabilities (Copeland and Cosby 2008/2009). In the Nordic countries, The Nordic Institute for Studies of Innovation, Research and Education (NIFU; Holen and Gjerustad 2014), recently has published an overview of studies of successful schooling for children and youth with intellectual disabilities.

In our reading of the existing research, we found a striking pattern – and this pattern was also implicit in the NIFU overview – indicating that most interventions, irrespectively of the specific interventions used, seem to have proven successful. In fact, it was difficult to find any other characteristic of the successful projects that was more salient than that they had been carried out as interventions within a specific school or classroom. This of course raises the question how to really understand the successful results – a question usually not at all raised in the overviews. The most important question seems to be if the content of the intervention might be less important than the intervention itself.

Similar findings have been discussed in terms of the classic 'Hawthorne effect', first described in a study of a series of experiments in the Hawthorne works of the Western Electric Company in Chicago in the late 1920s and beginning of the 1930s. In general terms, the Hawthorne effect is described as an experimental effect in the expected direction however

not for the reason expected, but due to the effect on the participants of knowing themselves to be studied. The measurements of productivity of the Hawthorne factory showed that almost any manipulation of, for instance pay, light levels, rest, breaks, etc., all resulted in productivity rising and this was true for the individual workers as well as the group (Mayo 1945; Landsberger 1958).

Similar findings of unexpected effects have been discussed within the field of psycho-therapy effect research in terms of the so-called 'Dodo bird conjecture'. The expression is borrowed from Lewis Carol's book Alice's adventures in the wonderland, where a Dodo bird acts as the judge of a competition and declares the result in stating that: 'Everybody has won and all must have prizes'. Following Saul Rosenzweig's classic article from 1936, a number of researchers (Frank and Frank 1993; Wampold et al. 1997) have explored the idea that the lack of differences in results between specific techniques of psychotherapy can be under-stood as an influence of underlying, common factors present in all good psychotherapy interventions, but invisible to most professionals and researchers who focus on their specific theoretical and technical frameworks.

The first aim of this article is to re-analyse current research on educational interventions, including the NIFU overview. The second aim is to try to understand the surprisingly positive effects reported in many of the studies with a special focus on the dynamics of possible common factors influencing schooling for pupils with intellectual disability.

Understanding intervention effects

In order to better understand the effects of the educational interventions reviewed, we draw on the methodological discussions in psychotherapy research. Recently, the Dodo bird con-jecture has been introduced in social work research as well in order to understand unex-pected findings concerning effects of treatment of substance abuse. Let us start with the rather long history of psychotherapy effect evaluations as research within this field to some extent also seems to have influenced the discussion of effects of social work.

After the publication of Rosenzweig's (1936) theoretical article, it was not until the first comparative studies of psychotherapy effects was published by Luborsky, Singer, and Luborsky (1975), with the title, *Is it true that* 'everyone has won and all must have prizes?', that the extensive methodological discussion over therapy effects started. In the first meta-analysis of psychotherapy outcomes Smith and Glass (1977) concluded: 'Despite vol-umes devoted to the theoretical differences among different schools of psychotherapy, the results of research demonstrate negligible differences in the effects produced by different therapy types' (760). After this, a series of studies have discussed the Dodo bird conjecture. In a meta-analysis, Wampold et al. (1997) sets out to test the Dodo bird conjecture, which states that when psychotherapies really intended to be therapeutic (bona fide) are compared, the true differences among all such treatments are 0, and the meta-analysis confirmed the conjecture. Drawing on Rosenzweig (1936) and Frank and Frank (1993), Wampold et al. propose that the outcome can be understood in terms of common factors present in most psychotherapy techniques.

Here it is important to point out that the key issue of the Dodo bird conjecture concerning the methodology of effect studies is that even the golden standard of randomised-controlled designs fails to distinguish between good and the best practices. In order to be able to draw such conclusions one must compare several interventions that the researchers and

professionals believe really will work.[1] Such interventions in psychotherapy or social work are often so called 'bona fide' interventions. In fact, the randomised control designs seem to have a blind spot making it difficult to distinguish between different bona fide interventions and to discover underlying, general positive factors present in most interventions – something we will come back to.

The discussion in social work research shows similar patterns (Bergmark and Lundström 2011). Evaluations of positive effects, for instance in research on alcohol, drugs and addictive behaviour, has for a long time shown very small differences between different programmes and treatments. The lack of support for specific treatments was first interpreted as the result of a lack of detailed matching between personal characteristics of clients and specific treatment interventions. In fact, the most extensive research project ever in this field (lasted more than 10 years and included 1726 clients, 159 researchers, 95 therapist in 32 different research institutes) Project MATCH (Barbor and Del Boca 2003) was designed precisely to test if better matching could identify the most successful treatments. However, Project MATCH was not able to distinguish more successful treatments from less successful ones. On the contrary, the Dodo bird conjecture was shown to be valid also for treatment of alcohol, drugs and addictive behaviours.

Furthermore, the results from Project MATCH and other recent studies on treatment of abuse question the rationality in pursuing the search for specific evidence-based practices (Bergmark and Lundström 2011). Instead, researchers in social work now tend to look for new perspectives in studies of the effects of social work.

Although the Dodo bird conjecture has not been extensively discussed in education effect research, similar ideas have been advanced, including explorations of basic common factors. We will come back to this in the final discussion of our article.

Method

After an initial open search of literature on effects of educational programmes and interventions for pupils with intellectual disabilities, we decided to focus on reviews of such studies as they provide a quite extensive summery of the literature relevant for our aim. Our systematic search in relevant databases included ISI Web of science, Google scholar, Eric, Oria and Norart and the most frequently used key words were: intellectual disability, developmental disability, mental retardation, school, school inclusion, learning, best practice, intervention. We identified 27 research reviews on educational interventions for pupils with intellectual disabilities, covering a total of 646 research reports. As could be expected, the result of our search has some overlapping with the recent overview made by The Nordic Institute for Studies in Innovation, Research and Education, focusing on literature published 2003–2014 and on pupils 0–18 of age (Holen and Gjerustad 2014).

Thus, our study is to a large extent an in-depth re-analysis of reviews summarising the outcomes of educational interventions for pupils with intellectual disabilities, with a special focus on the patterns of intervention effects identified in these overviews. This means that more theoretical reviews and the extensive literature on how to develop, for instance, inclusive education were excluded from our re-analysis.

Another category of literature that also has been excluded from our re-analysis is exploring differences and similarities between interventions for pupils with intellectual disabilities and interventions for pupils with other kinds of disabilities or typical pupils. The underlying

aim of such studies often seems to be to try to match a specific intervention with pupils with a special kind of problems or opportunities. We have limited our scope to intervention studies that mainly evaluated interventions directed to intellectually disabled pupils as they are the focus of our article.

The interventions described in the reviews are either to be found within specific school subject areas such as reading, science or mathematics or in areas of social skills or skills to manage everyday life activities (ADL). The interventions are based in a wide range of theoretical and methodological frameworks and carried out in different countries.

The review of the reviews

The 27 reviews identified in our re-analysis are presented schematically in Table 1. In order to present an overview of the interventions and their results, the table summarises what kind of intervention is studied, how many studies and participants in this type of intervention the reviews include and which outcome they present.

The reviews present different types of educational interventions, like specific training (different kinds of prompting, non-contingent reinforcement [NCR], augmentative and alternative communication [AAC], increased phonological awareness [PA], social skills groups, use of social stories, etc.); some more general programmes (special curricula, adapted teaching programs, mainstreamed classrooms, etc.); assistive technologies (technical aid prompting) and adaptations of the environmental school setting.

When it comes to the specific method used in the interventions and their theoretical foundations, the reviews present a great variety. A number of the reviews report studies of Prompting, for instance when pupils learn to read (Browder et al. 2009) or training of skills in activities of daily living (ADL) (Dogoe and Banda 2009). Other examples are Augmentative or Alternative Communication used to promote speech production (Gevarter et al. 2013) or AAC to promote peer interaction (Chung, Carter, and Sisco 2012). Still other examples are the use of technical aids such as video-assisted instruction (Gevarter et al. 2013) or video prompts for improving different kinds of skills (Banda, Dogoe, and Matuszny 2011). In reading instruction phonological awareness, training is a frequently used intervention, often combined with direct reading instruction (Lemons and Fuchs 2010). In mathematics, fading prompts and feedback have been used in specific teaching interventions focusing on counting, calculation, etc. (Hord and Bouck 2012).

In Table 1, all the interventions are organised according to subject areas related to schooling or everyday life activities. *Reading education* was the most frequently found subject area in the whole overview. Seven reviews of reading studies describing interventions are listed in Table 1. Two reviews are listed in Table 1 concerning *language education*. *Mathematics education* was analysed in two reviews included in table 1. One of the reviews in Table 1, discusses *science education*. Four of the reviews in table 1 are found in the general category of *learning*. Ten reviews in Table 1 are categorised as ADL. Finally, one review of 21 studies of interventions supposed to promote self-determination skills is categorised as *other themes*.

As mentioned above, a great variety of interventions have been studied. A striking patterns in the outcome column is that almost all reviews report positive effects, described in terms of evidence-based practices, or more or less successful results of the intervention discussed. Randomised-controlled designs are rare, which is not unexpected as they are very difficult and ethically questionable to set up in educational studies of the kind we discuss

Table 1. Reviews of literature discussing educational interventions to students with intellectual disabilities.

Article	Number of articles reviewed	Subject area	Number of participants	Intervention	Outcome
Banda, Dogoe, and Matuszny (2011)	18 studies	ADL	68 participants (8–41)	Video prompting for improving daily life skills	Video prompting alone or combined with other strategies improved skills in a variety of tasks
Bouck and Flanagan (2010)	7 studies	Learning and ADL	24 participants (12–21)	The use of functional curriculum for learning daily life skills	Improved skills in reading and defining targeted words and sight words; improved independent living skills to be utilised in adult life
Browder et al. (2009)	30 studies	Reading	66 participants with severe developmental disabilities	Time delay as instructional procedure for teaching word and picture recognition	The use of time delay in teaching word and picture recognition was found to be evidence-based practice
Browder et al. (2008)	68 studies	Mathematics	493 participants with intellectual disabilities ranging from moderate to severe (adults included in 16 of the studies)	Systematic instruction in mathematics in academic and *in vivo* settings	Evidence-based practice when prompt fading procedures (least intrusive prompts and or time delay with feedback) are included
Carter and Hughes (2005)	26 studies	ADL	109 participants (11–22)	Skills-based interventions (e.g. self-management, social interaction instruction) and support-based interventions (e.g. general classroom participation, peer support arrangements) to promote interaction between students with intellectual disabilities and their general education peers	Skills-based instructions found to be positive and generalised across settings and partners. Less knowledge about the robustness and durability of support-based instruction
Carter et al. (2010)	83 studies	ADL	434 participants	Interventions (e.g. social skills training, self-management, peer training, peer networks, adult facilitation, etc.) to promote peer interaction between students with intellectual disabilities /ASD and peers with and without disabilities	Student-focused and peer-focused interventions had effect on peer interaction. Few studies focused on support-based interventions
Carr, Severtson, and Lepper (2009)	24 studies	ADL	49 participants (3–56)	Non contingent reinforcement (NCR) (fixed time, schedule thinning, extinction, variable time) to prevent aggression and problem behaviour	All forms of NCR showed robust effects. Fixed time with schedule thinning and extinction was classified as well-established
Chung, Carter, and Sisco (2012)	31 studies	ADL	115 participants (6–22)	Use of AAC or AAC aids in intervention packages (skills instruction, peer training, adult facilitation, environmental arrangements) to promote peer interaction	The intervention packages varied, but most were found to be effective to increase measures of peer interaction
Courtade, Spooner, and Browder (2007)	11 studies	Science	58 participants (6–21)	Instructional interventions in teaching science: constant time delay and response prompting methods	Improved skills in taught subjects such as first aid, use of cell phone when lost, weather or safety-related sight words, self-protective skills

Author (year)	Studies	Domain	Participants	Focus	Findings
Dogoe and Banda (2009)	12 studies	ADL	56 participants (14 were adults)	Constant time delay (CTD) in teaching chained tasks in different ADL activities (baking, cooking, dressing, purchasing)	CTD found to be an effective strategy for teaching chained tasks. Skills were generalised across settings, materials and people
Erickson, Hatch, and Clendon (2010)	54 studies	Reading	Number of participants not known	Evaluation of main stream teaching programs and use of assistive technology in reading instruction	Students with intellectual disabilities benefit from many of the same reading interventions that are used for other children. Assistive technology can support literacy both reading words and reading text with comprehension
Fowler et al. (2007)	11 studies	Learning	312 participants (5–36 years)	Self-determination interventions (e.g. choice making, goal-setting, self-advocacy) and effects on academic skills	Most interventions affected skills that supported academic performance, also traditional academic skills as math productivity and spelling accuracy
Gevarter et al. (2013)	14 studies	Language	66 participants (1–50)	Comparison of different AAC component interventions in aided and unaided AAC; e.g. different symbol sets, instructional strategies or speech output	Instructional strategies as building motivation, errorless learning and adding video models to picture exchange were found to have benefits
Hord and Bouck (2012)	7 studies	Mathematics	66 participants	Instruction in academic mathematics, e.g. addition, subtraction, multiplication, problem solving	Improved skills in mathematics, skills maintenance, increased motivation and generalisation of skills
Hudson, Browder, and Wood (2013)	17 studies	Learning	44 participants (5–20)	Instructional interventions as, e.g. embedded trial instruction, constant time delay, least prompts and task analytic interventions	Embedded trial instruction and constant time delay judged as evidence based, while least prompts and task analyses seen as promising
Lemons and Fuchs (2010)	20studies	Reading	No information about number of participants	Phonological awareness (PA) intervention and reading instruction combined with PA intervention	Children with intellectual disabilities rely on PA skills in learning to read. Phonic-based instruction may benefit some of these children
Liu, Wu, and Chen (2013)	26 studies Students with intellectual disabilities and mobility impairments	Learning	Lack of information about number of participant in several of the studies	Use of computer-based technology (web-based mentoring, educational computer games) as help to acquire academic knowledge	Most of the studies focused on the effectiveness of learning technology and 77% found positive outcome
McLinden (2012)	No report on method	Learning	No number of studies or of participantsParticipants with visual impairment and intellectual disabilities	Describing how adult partners can mediate haptic learning experiences	The studies supportsthe significance of the child's adult partner in ensuring that progression promotes activeengagement with the environment, and is suited tothe individual needs of child

Table 1. (*Continued*).

Article	Number of articles reviewed	Subject area	Number of participants	Intervention	Outcome
Mechling (2007)	40 studies	ADL	No information about number of participants	Technical aids used as prompts to initiate and perform daily life activities	Positive results in all studies for antecedent prompts. Some studies showed generalisation to new activities or maintenance of skills
Mechling (2011)	21 studies	ADL	189 participants with moderate intellectual disabilities and autism spectrum disorders	Use of three types of portable electronic devices as prompts or as support in daily life activities	Portable technological devices can be used across environments for tasks as choice making, multi-step skills, time- and task management
Millar, Light, and Schlosser (2006)	23 studies	Language	67 participants	AAC interventions for supporting speech production	89% of the participant showed improvements in their speech production
Reichow, Volkmar, and Steiner (2012)	5 studies	ADL	196 participants (6–21)	Social skills groups for people with ASD	Some evidence that social skills groups can improve social competence for some children with ASD
Roberts, Leko, and Wilkerson (2013)	19 studies	Reading	72 participants (13–21)	Reading instruction methods (e.g. sight word instruction and time delay)	Most studies focused on vocabulary instruction with sight words and time delay. Positive results from such studies. Studies which included both functional and academic curriculum and incorporated technology seemed promising
Saunders (2007)	26 studies	Reading	No information about number of participants	Phonological awareness instruction and word attack skills	Results are promising, but too few experimental studies designed to demonstrate effective teaching procedures
Sun and Kemp (2006)	26 studies – few studies about direct interventions	Reading	Students with Down syndrome. No information about age or number of informants	PA instruction with focus on the skills of alliteration, detection, phoneme isolation, rhyme, spelling, error-correction, whole word connection	Improvement of PA skills as result of explicit PA instruction. Training of PA skills with alphabetical approach had effect on reading untaught words
Whalon, Al Otaiba, and Delano (2009)	11 studies	Reading	61 participants with Autism Spectre Diagnoses	Reading instruction (code focused/meaning-focused reading interventions)	Positive reading effects of code-focused interventions and some positive results of meaning-focused interventions
Wood et al. (2005)	21 studies	Other themes	53 participants (27 aged 5–21), 26 adults with severe or profound intellectual disability	Teaching components of self-determination skills (choice making, goal setting, problem-solving, decision-making and self-advocacy) by using a variety of procedures: e.g. prompting, time delay, self-instruction, self-monitoring	Results show efficacy of choice-making. However, there are few studies about components as decision-making, goal setting and attainment, self-awareness and self-advocacy

here. It is also important to notice that none of the studies reporting positive effects had a design based on comparisons of relative effects between bona fide interventions and as a consequence did not control the Dodo bird conjecture.

In conclusion, it is of course not possible to exclude that some of the specific practices studied in the described reviews have positive effects in the learning of pupils with intellectual disabilities but it is at least equally plausible that the documented effects refer to basic common factors, like the quality of the teacher–pupil relationship and positive expectations.

Discussion

Empirical evidence concerning schooling for pupils with intellectual disabilities is badly needed by politicians, school administrators, teachers, parents and their children. It is of course not possible to exclude that the surprisingly positive results of almost all interventions reviewed could mean that we are beginning to discover a number of best practices and only need to continue along the same road to be able to match pupils with specific problems with the right educational interventions even better.

However, the general pattern of the positive results from the wide range of educational interventions made visible in the re-analysis of the existing reviews also raises some important questions – questions raised and discussed also in psychotherapy research and research on the effects of social work. One question concerns how to understand the unexpected patterns of positive effects. Also the NIFU report mentions the striking finding that most interventions described in their overview have been successful and the authors comment on this in the beginning of the summary:

> The findings in these studies are positive but the results from this type of research is in little extend possible to generalize. This means that even if the research studies educational practices that can have good effects for the target group, we don't know if the young persons would have learnt the skills equally well in more traditional, or in other, practices. This is a weakness of the existing research. Effect evaluations with a quantitative control group design are therefore necessary in order to confirm the positive results indicated. (Holen and Gjerustad 2014, 7, our translation)

We totally agree in the conclusion that the patterns of positive effects in the reviewed studies demand special attention in terms of generalisations. It is true that the results do not tell us much about the benefits of the studied interventions in relation to other possible practices. However, we find no discussion either of the Dodo bird conjecture or of common factors, which have been frequently discussed in relation to such patterns of unexpected positive effects in psychotherapy and social work research. Moreover, Holen and Gjerustad (2014) seem unaware of the fact that traditional randomised-controlled studies do not help much in making the distinction between the positive effects of different educational practices. In order to distinguish true effects in a specific practice from, for instance, common positive intervention effects comparisons between different bona fide treatments are necessary (Bergmark and Lundström 2011). It could be added that we did not find any theoretical discussion of alternative understandings of the positive effects, in line for instance, with the theory of common factors in the educational reviews. In fact, the discussion concerning a possible Dodo bird conjecture seems to be absent in this educational literature.

It could be argued that journals, authors of research papers and research itself, to some extent, are predisposed to produce positive outcomes. This makes the findings of the strong dominance of positive effects less surprising. However, it is surprising that these circumstances almost never are discussed. Furthermore, the fact that the publication of research presenting positive effects is supported by the way research is produced seems to make it even more important to investigate alternative understandings of, for instance, common positive factors that could support success across interventions.

Before we address these issues more in detail, we want to point to another – for many professionals and researchers – unexpected finding described in a recent report from the Danish Clearinghouse for Educational Research: Evidence on Inclusion(Brørup Dyssegaard and Søgaard Larsen 2003). This report is a meta-analysis of research concerning effects of inclusive education for, among others, pupils with intellectual disabilities. In a conclusion, they state: 'we cannot unequivocally conclude which school offer (inclusive or special schools) has the greatest effect on the scholastic and social developments of special needs students'. (Brørup Dyssegaard and Søgaard Larsen 2003, 44, our translation) Against the background of the strong ideological support for inclusive education in many countries during the last decades, this comes as something of a surprise to a lot of people. However, what is first of all of interest here is that the results of inclusive and special schooling seem to be equally good (or bad). Again we seem to be faced with an 'everybody-has-won-and-all-must-have-prices' result. It is true that effects of inclusive and special schooling cannot automatically be compared to specific, educational interventions. However, the unexpected absence of differences in positive effects seems to be possible to understand against the background of the hypothesis of hidden, common factors, widely discussed in the literature on how to understand the Dodo bird conjecture.

Against this background, we argue that striking positive effects reported in the re-analysed reviews should be seen as expressions of the Dodo bird effect. In line with the conclusions concerning the Dodo bird conjecture in psychotherapy and social work effects, it is important that the focus in educational research on effects of specific interventions now should be replaced by a new paradigm focusing on, for instance, underlying, common factors, like teacher-pupil engagement, sense of control, expectations and teacher ability to encourage the pupils to learn.

In fact, there is educational research on school achievements that supports the hypothesis of, for instance, the importance of teacher-pupil factors in understanding school achievements. Skinner, Zimmer-Gembeck, and Connell (1998) point out that one of the strongest predictors of children's performance in school is individual differences in their perceived control of what they will achieve and that this perception of control can be strongly increased by teacher attention and support. Reviews of hundreds of studies document robust relations between children's cognitive performance and different aspects of their perceived control and motivation. Teacher support and attention play a crucial role in promoting pupils' motivation and perceived control, initiating a kind of good circles present in most school intervention. A special reason for our interest in the paper by Skinner et al. is that it is based on Attribution Theory, a theory that has helped us understand so-called 'learned helplessness' (Maier and Seligman 1976) – a phenomenon of special relevance to schooling for pupils with intellectual disability. In short, this theory states that persons – and this seems to be especially true for persons with intellectual disabilities – who learn not to expect to succeed in school (experiencing, for instance, that they are not in control of their school

achievements), learn that it is of no use to make an effort in school. In fact, this theory has much in common with the key factor to successful schooling in general identified by Skinner, Zimmer-Gembeck, and Connell (1998). It can be added that there is strong evidence that teachers' awareness of the fact that their educational work is being evaluated is likely to motivate them to become better teachers, supporting pupils to perform better. Hofstetter and Alkin (2003) have systematically reviewed 30 years of school effect research with a particular interest in whether it has an effect that institutions and interventions are being evaluated. They conclude that evaluations seem to be instrumental in reducing uncertainties and increasing focus of processes that, in turn, increase the efforts and eventually the results.

Thus, we argue that the present situation of research on educational interventions for pupils with intellectual disabilities, methodologically, can be compared with research in the described fields of psychotherapy and social work research, where extensive, high-quality studies also found just negligible difference in effects between different specific interventions based on specific theoretical frameworks and methodologies. The research on the effects of psychotherapy and social work have shown that the dominating research tradition of best practices and its golden standard is caught in a dead end not just presenting an over optimistic image of specific interventions, but also preventing us from exploring the really important factors behind the best interventions. In a comment to the failure of the prestigious Project Match focusing on substance misuse, published in the world's leading scientific journal on substance abuse, *Addiction*, Orford (2006) concludes: 'We are, I believe, now facing a crisis regarding treatment research in the substance misuse field and a paradigm shift is called for' (653).

We argue that educational research on school achievements for pupils with intellectual disabilities is facing a similar crisis, demanding a paradigm shift. The bulk of positive results of specific educational interventions strongly indicate that there is something missing in this research. Of course, the Dodo bird conjecture could be further tested, as has been done in the fields of psychotherapy and social work, but it seems to be likely that the dominating research tradition today in education for pupils with intellectual disabilities is caught in a dead end preventing us from starting exploring the really important factors of school achievements.

Here, it is interesting to add that the Hawthorne effect, that most often has been discussed in terms of undesired bias when an effect is mistakenly thought to be caused by one thing but can actually be shown to have been influenced by another, also can be understood as an indication of underlying, hidden factors present in most interventions.

One of the most promising roads for the new paradigm seems to be in-depth explorations of the possible, hidden common factors that seem to influence all kinds of good educational interventions. As mentioned above, Wampold et al.'s (1997) theory of common factors draws on Rosenzweig (1936) and Frank and Frank (1993). In discussing Frank's common factor theory, Laska and Wampold (2014) state: 'Frank's theory of change was not simply a listing of common factors randomly collected together [–] but a coherent scientific explanation for how people change in psychotherapy' (519). Wampold (2015) summarises three common major factors or pathways to successful psychotherapy.

(1) *The real relationship,* described as the personal relationship between therapist and patient marked by the extent to which each is genuine with the other and perceives/experiences the other in ways that benefit the other.

(2) *Expectations.* Expectations in psychotherapy work in several possible ways. Frank and Frank (1993) discussed how patients present to psychotherapy are demoralised not only because of their distress, but also because they have attempted many times and in many ways to overcome their problems, always unsuccessfully. Participating in bona fide psychotherapy interventions appears to be a form of remoralisation.

(3) *Person specific ingredients.* The specific ingredients universally produce some salubrious actions. That is, the therapist induces the patient to enact some healthy actions, whether that may be thinking about the world in less maladaptive ways and relying less on dysfunctional schemas (cognitive-behavioural treatments), improving interpersonal relations (interpersonal psychotherapy and some dynamic therapies), being more accepting of one's self (self-compassion therapies, acceptance and commitment therapy), expressing difficult emotions (emotion-focused and dynamic therapies), taking the perspective of others (mentalisation therapies), and so forth.

Common positive factors in psychotherapy or social work can of course not automatically be supposed to be equally influential in education, but there are some striking similarities between the common educational factors described by Skinner, Zimmer-Gembeck, and Connell (1998) and the common factors discussed, among others, by Wampold (2015) within the field of psychotherapy. In both cases, the quality of the relation between teachers/psychotherapists and pupils/patients seems to be crucial. Expectations also seem to play an equally important role in successful outcomes, in being a form of remoralisation, motivation and new experience of locus of control – factors that can be expected to contribute to increased efforts of pupils and successful schooling. Here, we will not be able to present a theory of common factors in educational interventions for pupils with intellectual disabilities. This demands new comparative, empirical research looking, for instance, at possible hidden influential factors in the interventions that has showed the best effects. Our main point here is that the present state of research on successful schooling for pupils with intellectual disabilities show some worrying signs of being caught in the same traps as researchers studying psychotherapy and social work effects have identified and left behind, searching for a new paradigm.

Of course we don't want to discourage future researchers from engaging in effect studies and meta-analyses. Our point is first of all, that we need a new line of research exploring opportunities of a new paradigm and developing, for instance, theories of basic common factors in successful schooling for pupils with intellectual disabilities. This new line of research will provide – we believe – valuable information for the development of a new kind of evidence-based educational practices. Instead of sticking to the procedures of the old paradigm, to provide guidelines and general recommendations for practitioners, the aim of the new research tradition should first of all be to provide 'the enlightened and critical practitioner' with alternative – and perhaps more productive – understandings in line with the original idea of evidence-based practices described by Sackett et al. (2000).

Note

1. This is often discussed in terms of the priority of relative effects in relation to absolute effects. The second refers to positive effects identified in the evaluation of a specific treatment or programme, whereas the first refers to a comparison between different bona fide treatments or programmes.

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