



Regional Centre for Child and Adolescent Mental Health

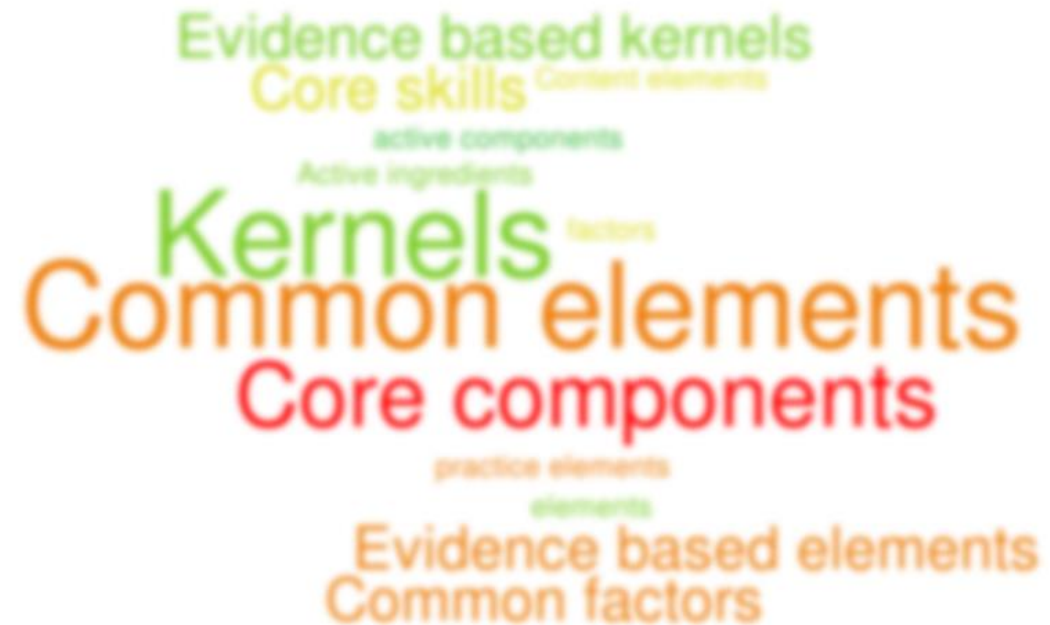
Eastern and Southern Norway

PROMOTING ADOPTION OF EVIDENCE USING COMMON ELEMENTS METHODOLOGY AND CO-CREATION: ENHANCING IMPLEMENTABILITY

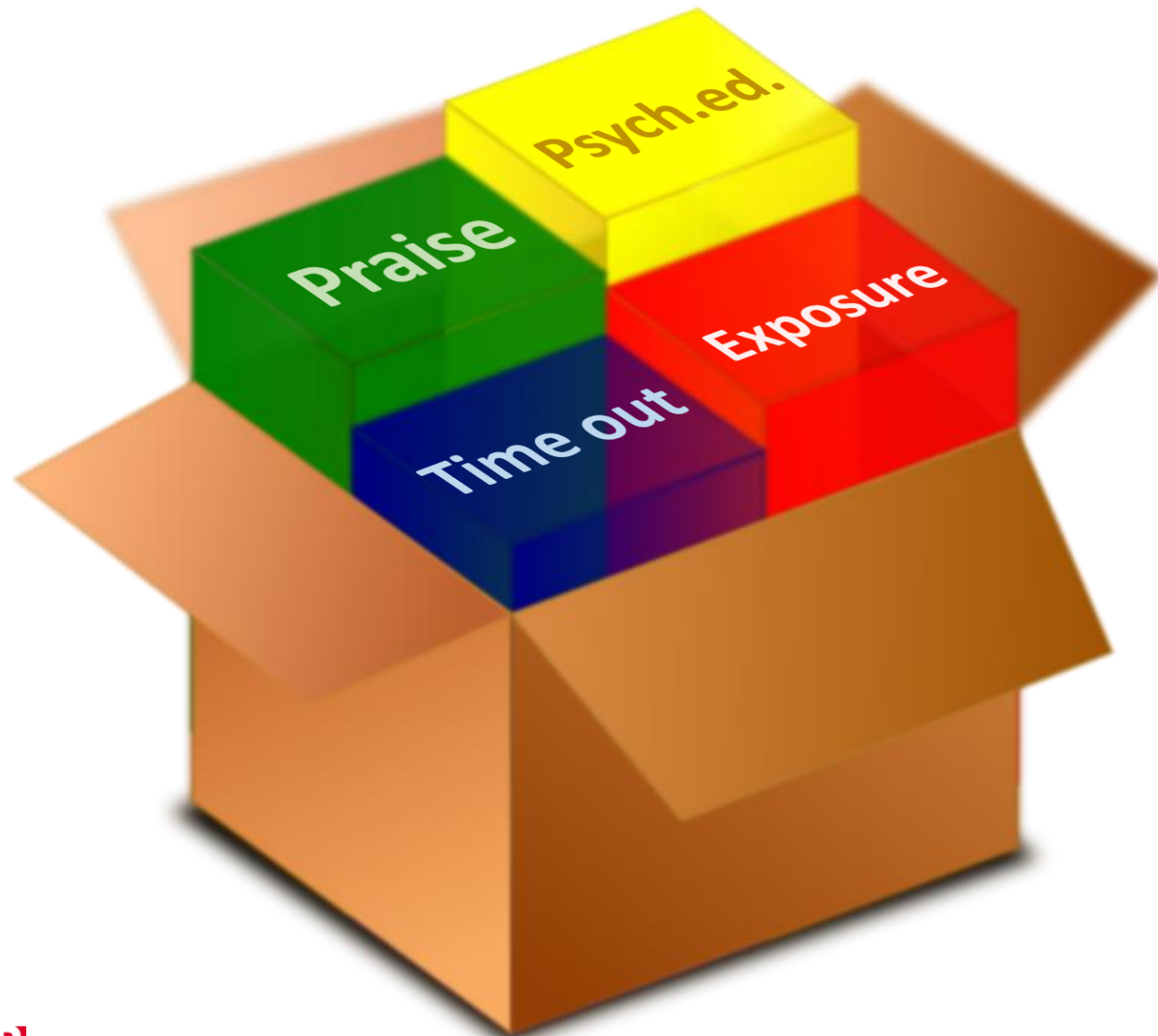
Thomas Engell, PhD student

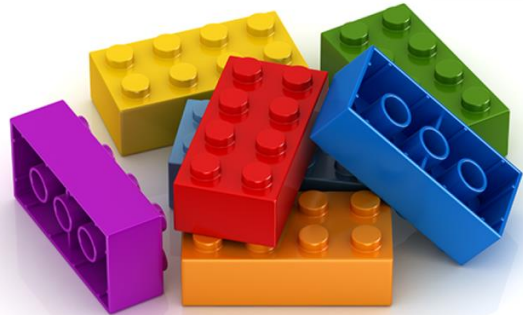
Regional Center for Child and Adolescent Mental
health, Norway

Global Evidence and Implementation Summit, 2018

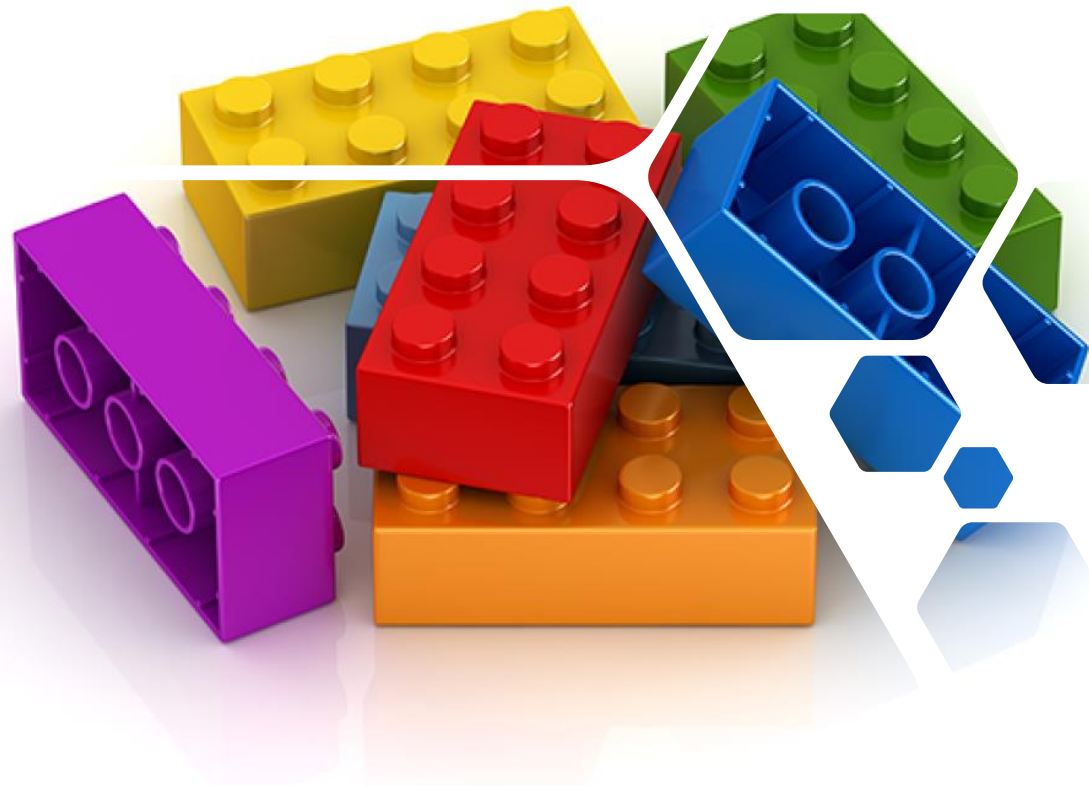


The concept





Common elements methodology

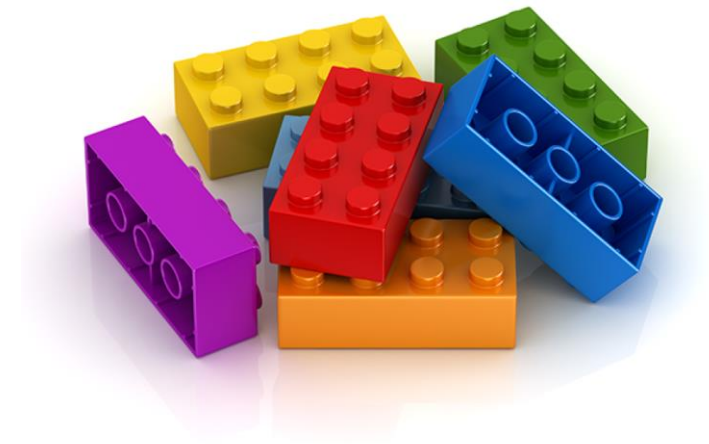


Systematic distillation of discrete content of interventions that are frequently shared by a selection of interventions or programs

Fine-grained testing and understanding

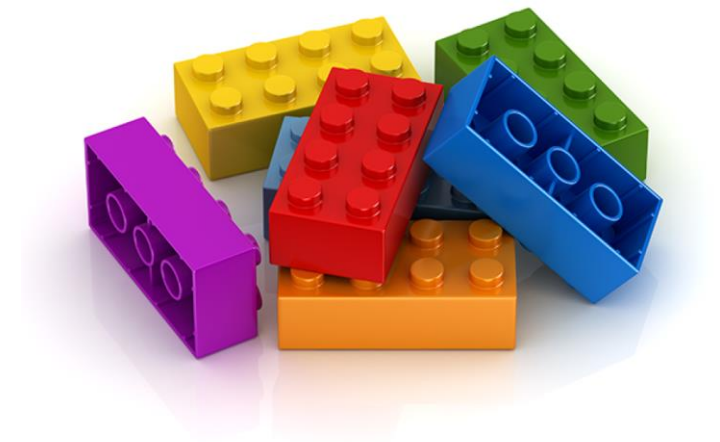
Utility of researching common elements

- Optimization of existing interventions (remove unnecessary elements / add essential elements)
- Inform appropriate adaptations of interventions within fidelity
- Develop new interventions (Transdiagnostic, modular, fine-tuned/lean)
- Education, implementation, and service design
 - Core skills and Empirically supported eclecticism?



Background

Promote translation of research evidence into improved practice.

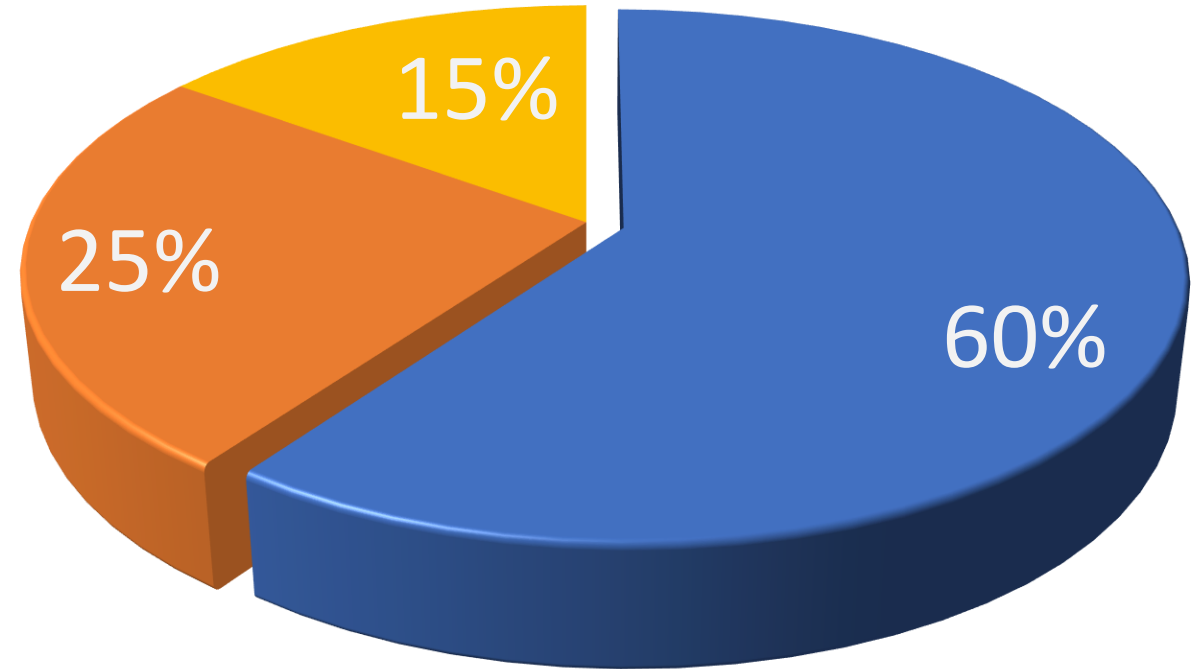


Reach

Percentage of population in need receiving the intervention

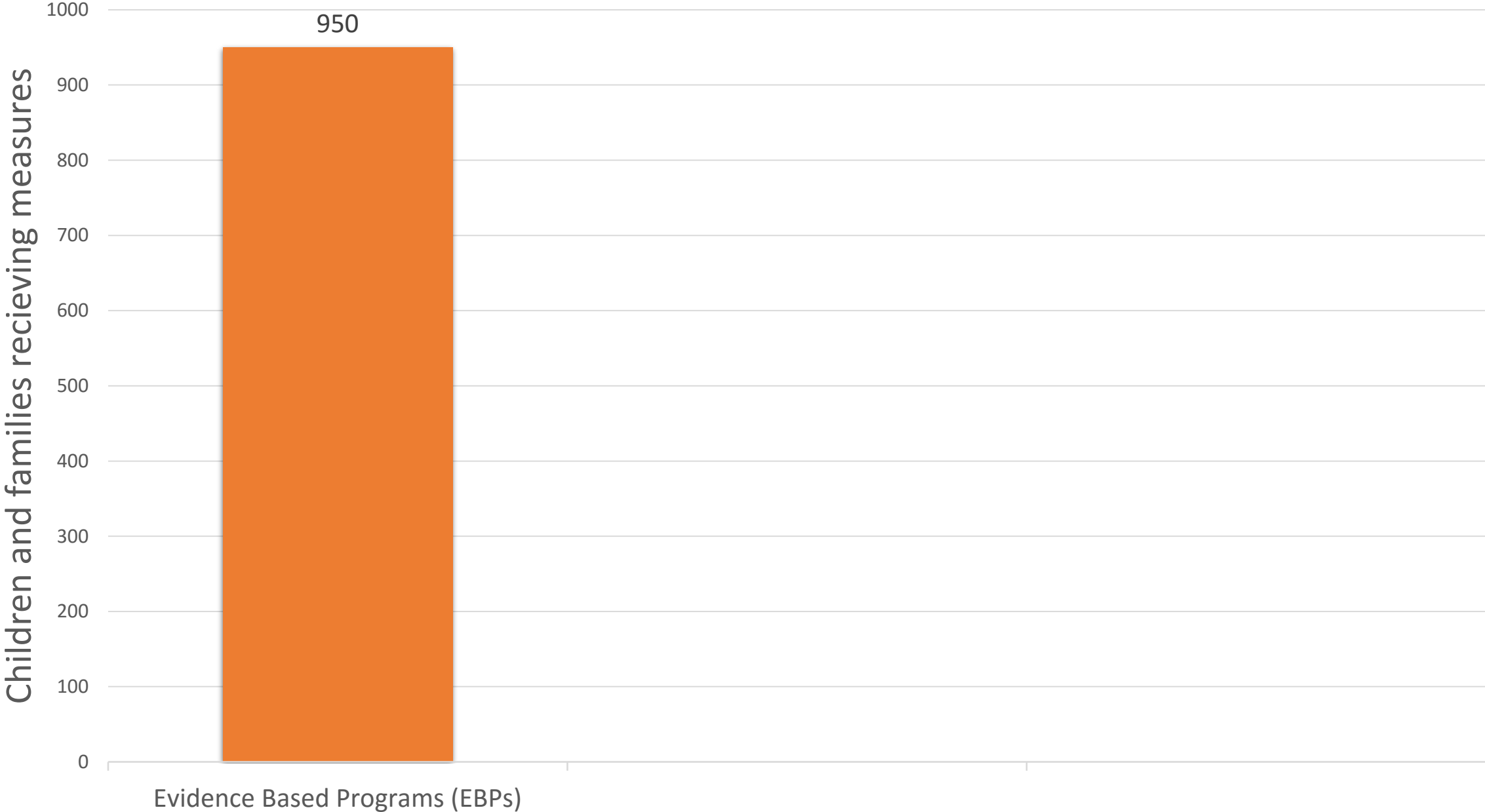
RE-aim

Percentage of eligible participants approached who participate divided by number of eligible participants (Glasgow et al., 1999)

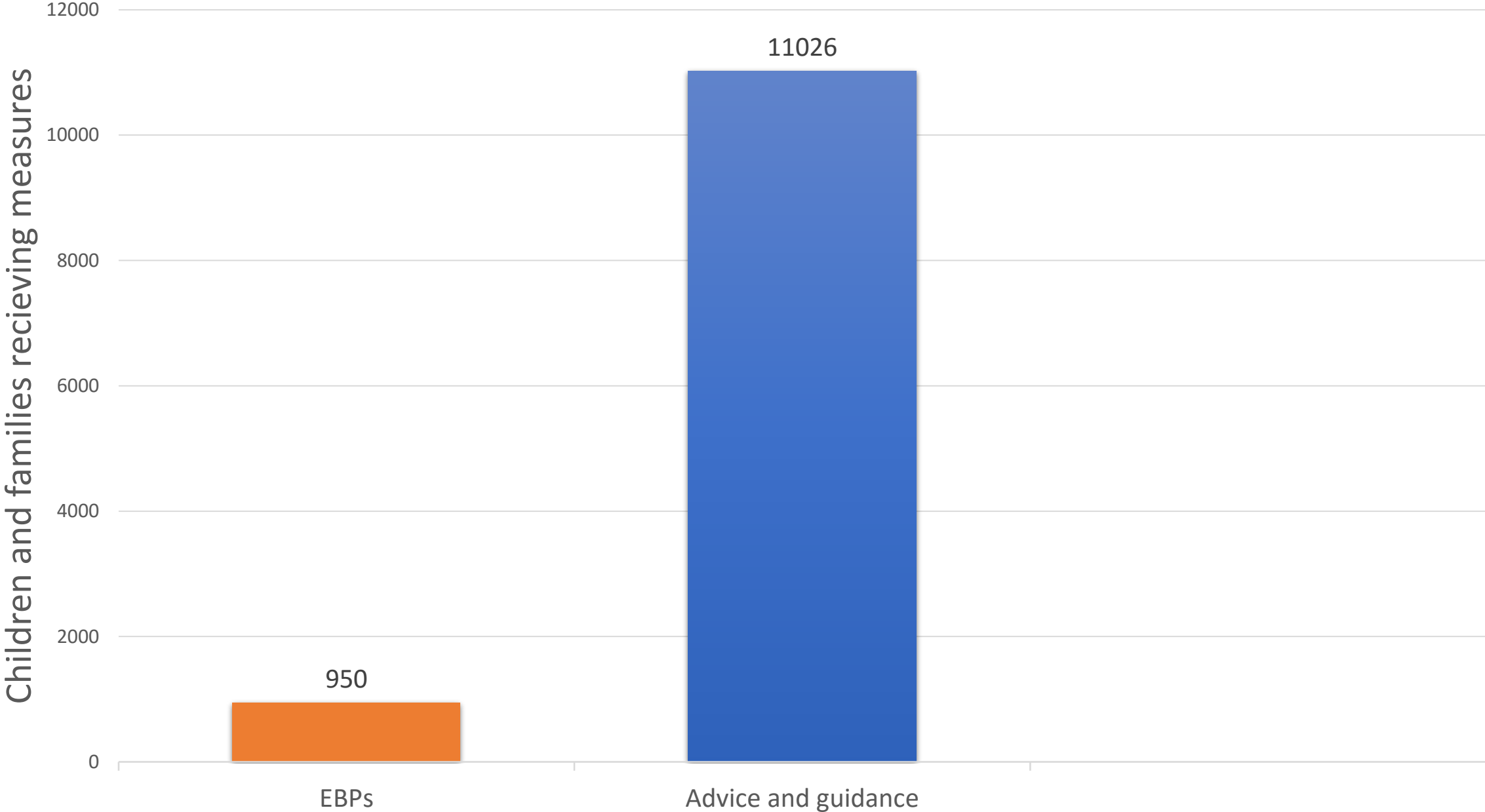


- Needed intervention, was not offered
- Needed intervention and got it
- Was offered intervention and said no thanks

Reach of EBPs in child protection services

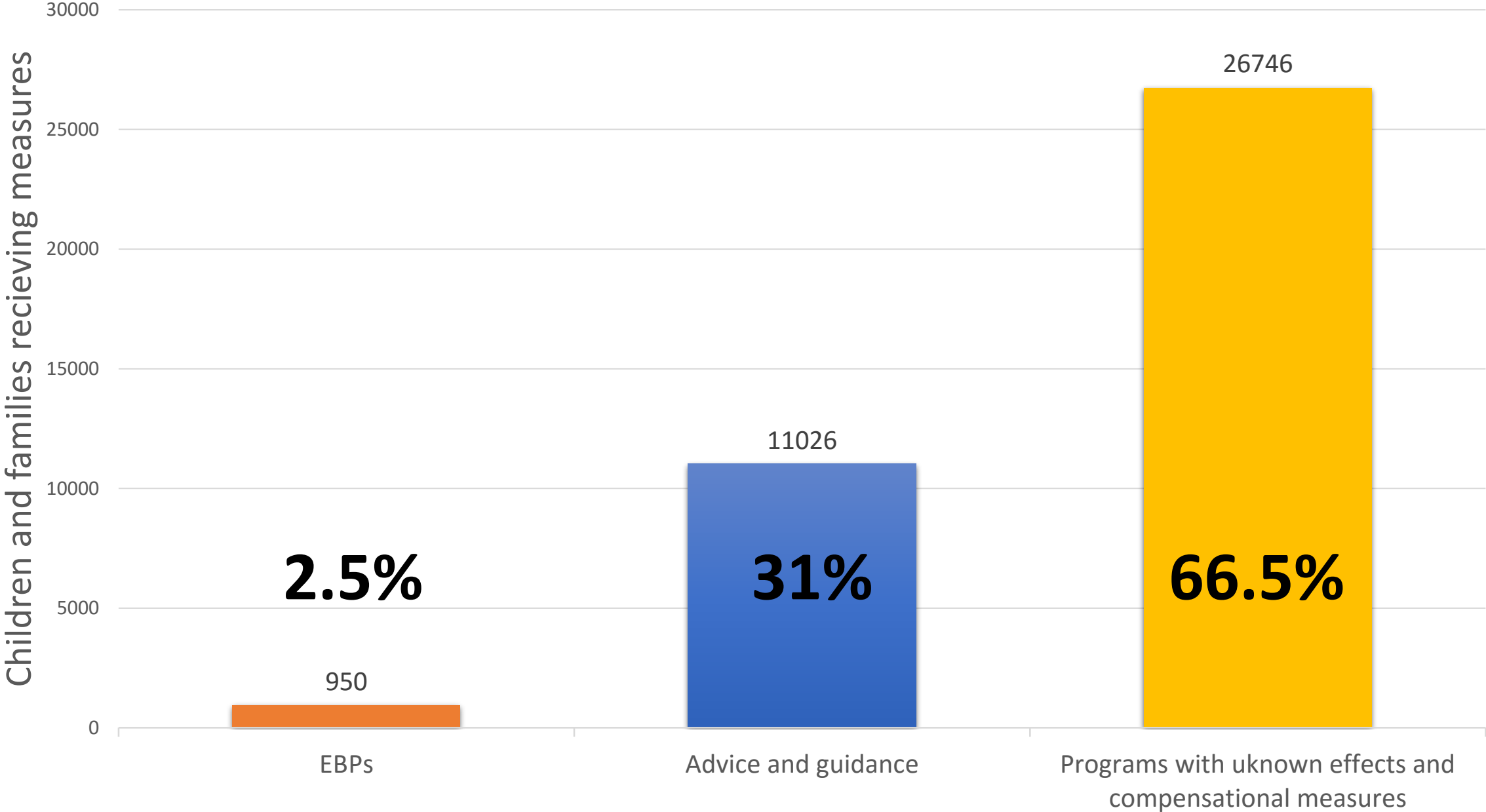


Reach of EBPs in child protection services



Reach of EBPs in child protection services

Christiansen et al., 2015



Why do Evidence based Programs (EBPs) have limited reach?



Issues with implementation of traditional programs:

- Insufficient flexibility
- Threatens practitioners autonomy
- Disorder specific, unfit for comorbid problems
- Demanding in resources and infrastructure
- One-directionally designed

Decreased..

Appropriateness

Percieved fit, relevance or compatibility in context

Acceptability

Agreeableness with practitioners

Feasibility

Is it doable given context and circumstances

Usability

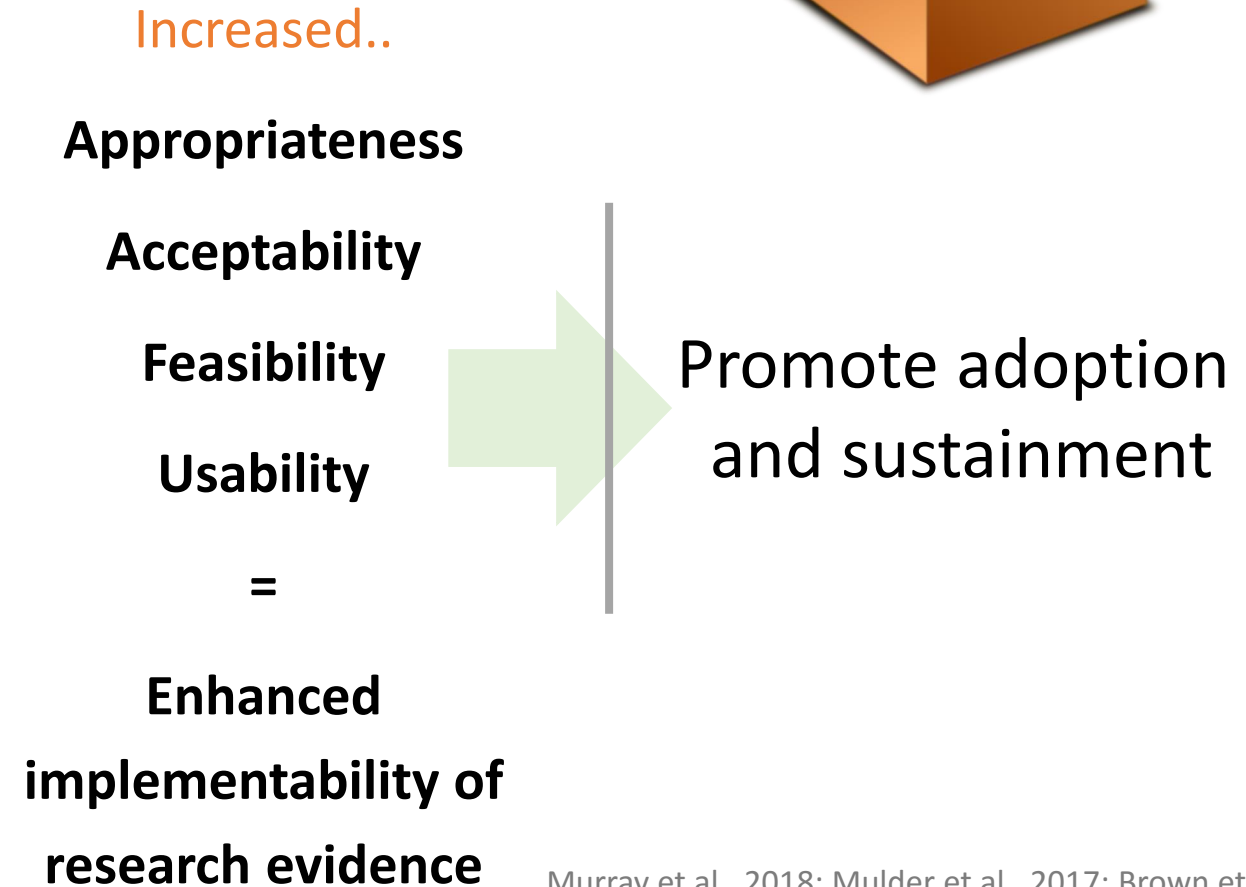
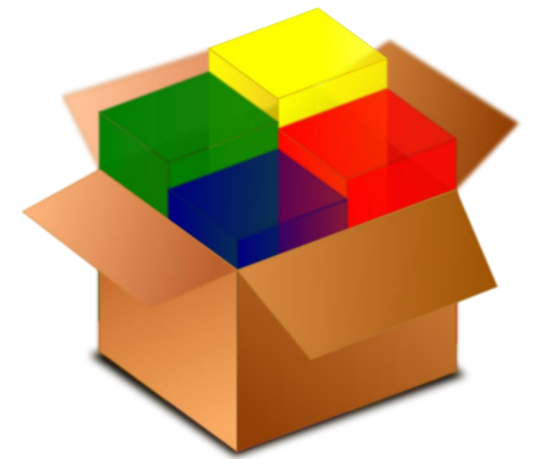
«..can be used by specified users to achieve specified goals with effectiveness, efficiency, and satisfaction in a specified context (Lyon & Koerner, 2016)»

Implementability

Brown et al., 2017; Hogue et al., 2017;
Lyon & Koerner, 2016; Proctor et al., 2011

Benefits of element-approaches

- Discrete, flexible, and transdiagnostic
- Integrates with practitioners autonomy
- Tailoring to individual needs and specific contexts
- Less resource demanding
- Well suited for practitioner-centered service design



Murray et al., 2018; Mulder et al., 2017; Brown et al., 2017; Hogue et al., 2017; Lyon & Koerner, 2016; Mcleod et al., 2016; Chorpita et al., 2011; Borntrager et al., 2009; Garland et al., 2008)

An example of use of Common elements methodology

Integrated Knowledge Translation in Child Welfare: Improving educational outcomes for children at risk



Effective community- and home based academic interventions for children at risk: A systematic review and common elements analysis

Engell, Kirkøen, Hammerstrøm, Ludvigsen, Kornør, & Hagen
(in prep)

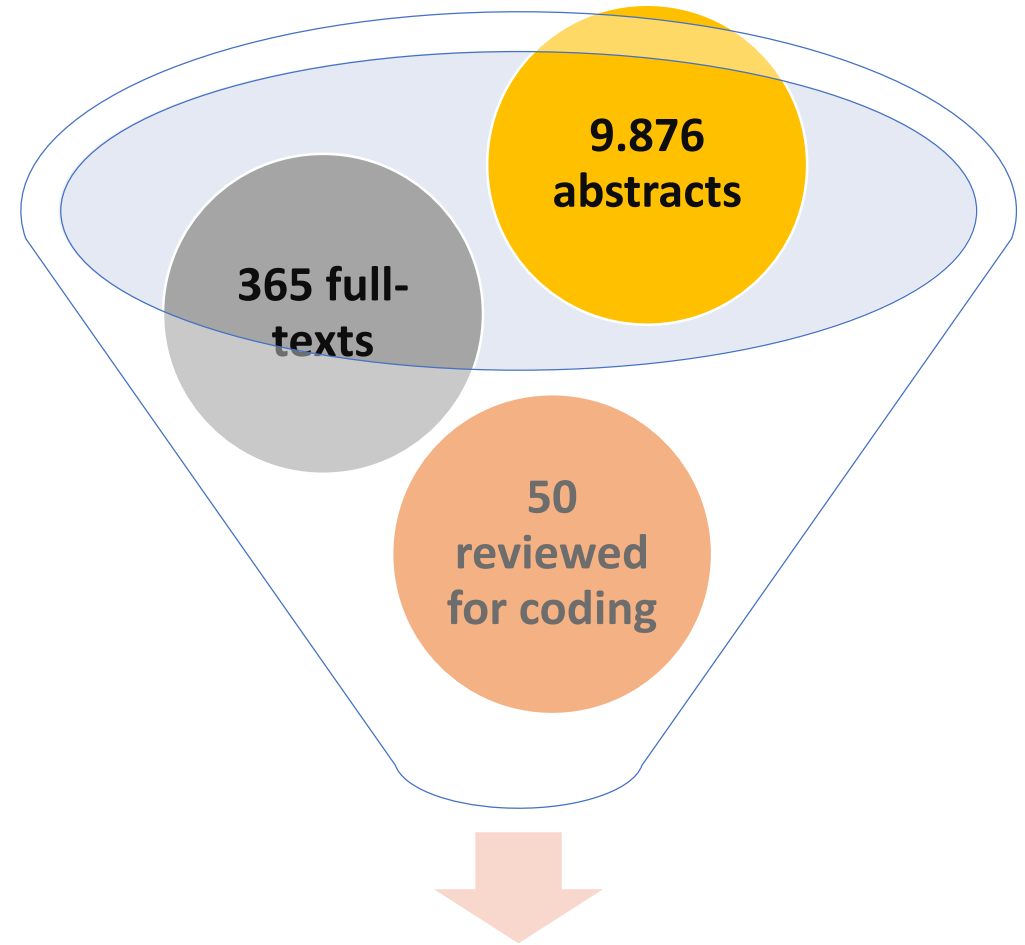
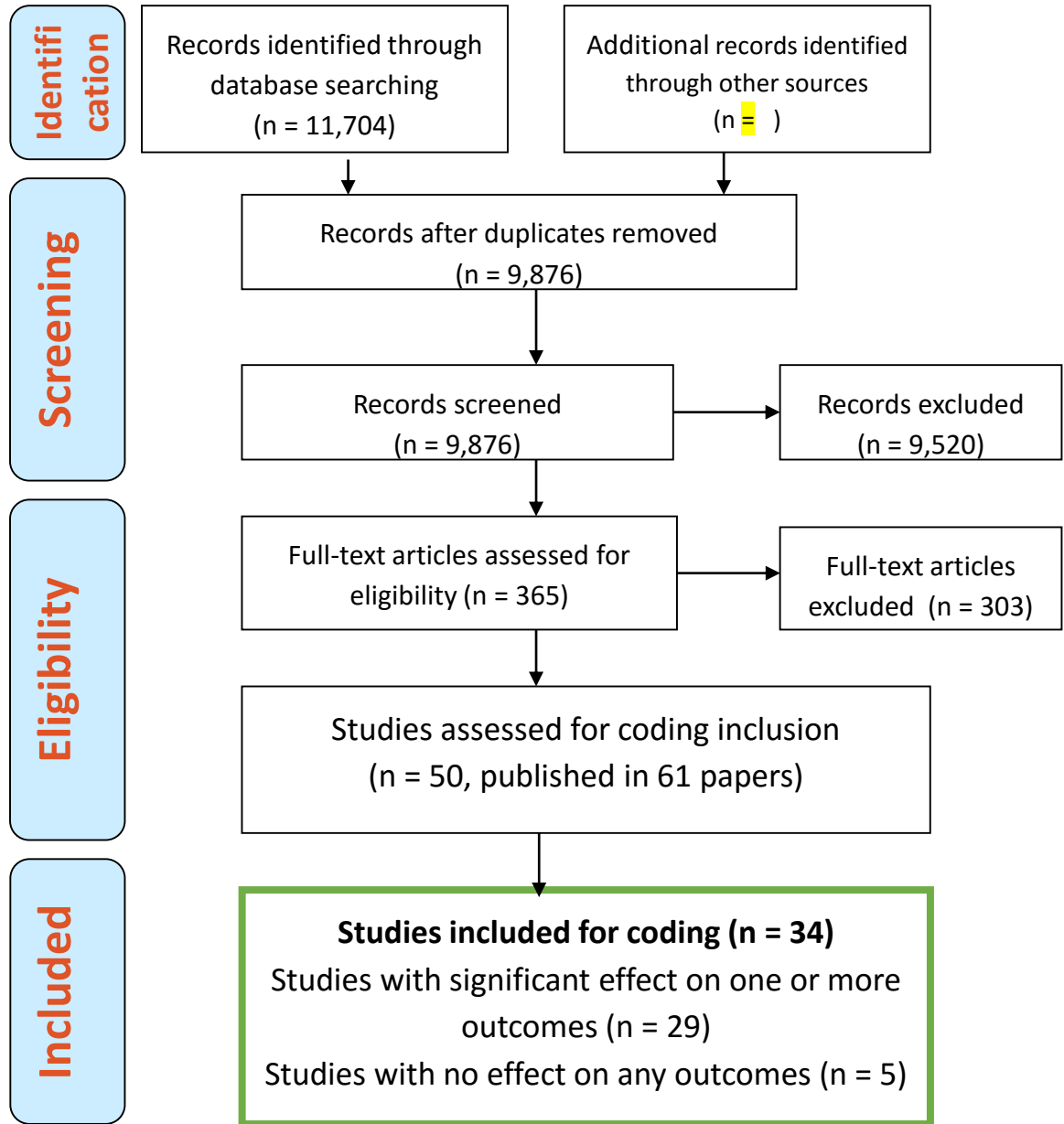
The review

Community- and home-based interventions for improving academic achievement in children at risk: A systematic review protocol

(Engell et al., 2016)

Primary school children at risk of dropout

Interventions delivered out-of-school-time



34 included for common elements analysis
29 sig.effective, 5 non-effective, 0 harmful

The common elements methodology

Builds on prior methods

Chorpita & Daleiden, 2009; Mcleod et al., 2016; Garland et al., 2008

Pragmatic and detailed coding in matrixes

Focuses on common combinations and interactions of elements as well as on single elements

Includes features to reduce confirmatory bias and popularity bias

Limited to study info available

Defining elements

Practice elements

Specific activities or actions used to evoke or influence an outcome

e.g. goal setting, praise, or psychoeducation

Process elements

Describes how and under what circumstances the practice elements are delivered

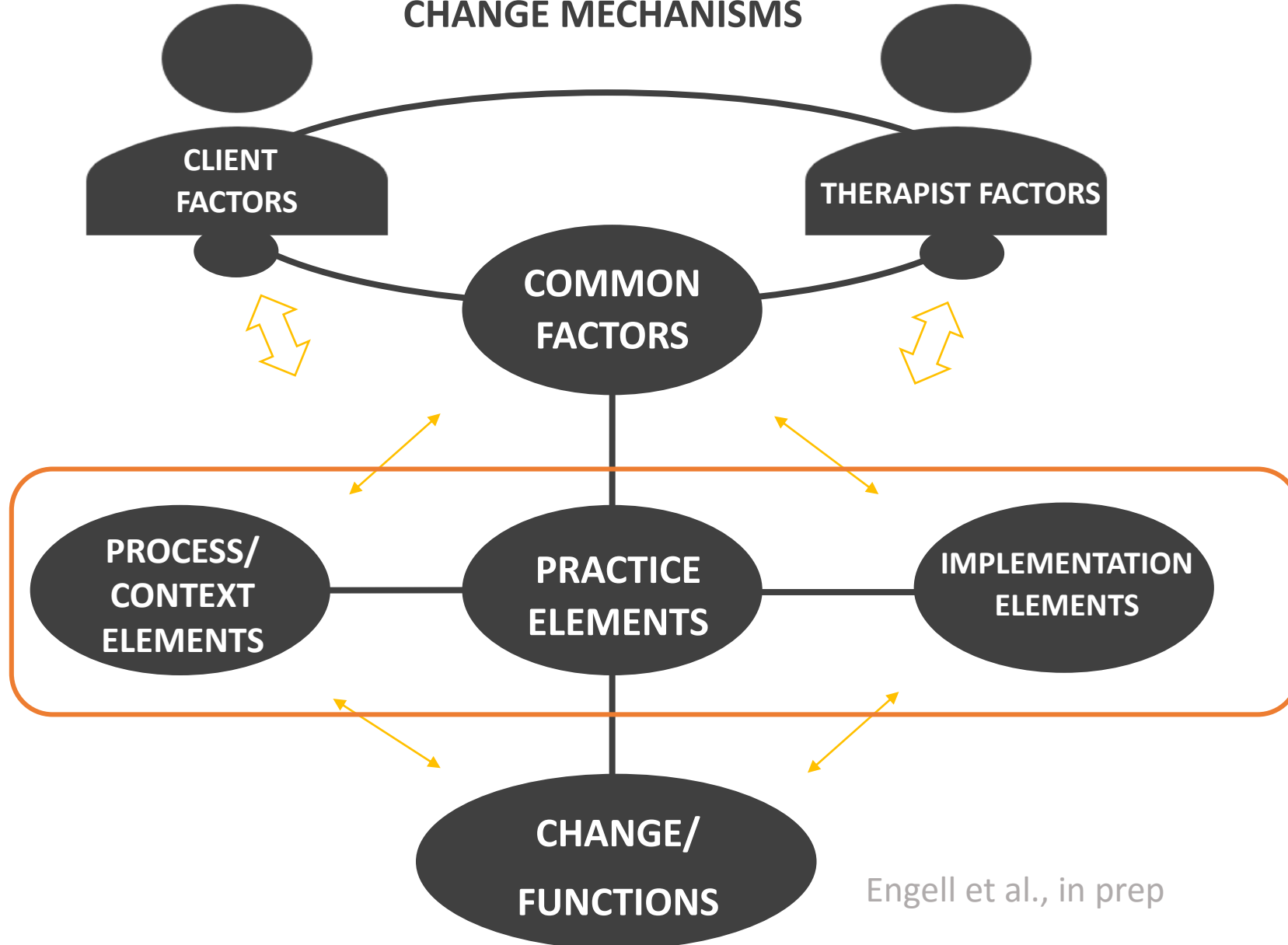
e.g. in group, at home visit, or using role play

Implementation elements

Discrete strategies used to facilitate or enable the delivery of practice- and process elements (strategies adopted from the ERIC project, Powell et al., 2015)

e.g. ongoing training or audit and feedback

FACTORS AND ELEMENTS IN THERAPEUTIC CHANGE MECHANISMS



Engell et al., in prep

Coding procedure

Prepare

- Gather info on interventions (articles, manuals, reports)
- Prepare coding matrix with anticipated elements and definitions (consensus-mapping)
- Pilot code

Code

- Two coders code all study characteristics and practice-, process-, and implementation elements used in the interventions with traceable id.numbers in independent matrixes.
- Separate matrix for effective studies (pos) and non-effective studies (non) and harmful studies (neg)
- Novel elements added during (reduce confirmation bias)
- Combine matrixes and resolve conflicts (total coding agreement: 90%)

Review and extract

- Apply frequency based algorithm to identify:
 - Common practice elements
 - Common process- and implementation elements frequently combined with each common practice element
 - Common combinations of common practice elements and common process- and implementation elements
- Apply a vote counting procedure and calculate Frequency Count Value (FV). $FV = F_{pos} - (F_{non} + F_{neg}^2)$

Manual and templates available on request

Practice elements

1,6,9,12,14b,15,16ab,19,24,

Process- and implementation elements

Activity	Delivered by				Delivery method														
	4-Tidstedt	Parent/caregiver	Parent/caregiver	Volunteer/Parent/Professional	Peer	Computer	Hybrid	Parent/caregiver interaction	Self/Video	Self	Self/Professional interaction	Group interaction	Self/Instr	Group instruction/instru	Child and parent ta	Other	Material	Computer	
Parental involvement at home																			
Y-axis: Context of intervention	4-Tidstedt	Parent/caregiver	Parent/caregiver	Volunteer/Parent/Professional	Peer	Computer	Hybrid	Parent/caregiver interaction	Self/Video	Self	Self/Professional interaction	Group interaction	Self/Instr	Group instruction/instru	Child and parent ta	Other	Material	Computer	
Modeling			16a					16a											
Role playing		28		28	28							28		28					
Playing reading game			10	10				10											
Solving math material digital						1,14b,16a		1			20							1,14b,16a	
Basic math computation (addition, subtraction)											20								20
Intermediate math computation (multiplication, division)											20								20
Advanced math computation (fractions, equations*)											20								20
Measurement understanding											20								20
Use of homework diary	6	6	4,6		6			4,6											6
Use of homework checklist	4,6,9,14b	1,4,6,14b	1,4,6,9,14b		4,6,14b			1,4,6,14b											1,4,6,9,14b
Use of homework contracts	9,24	24	9,24		9,24						24								9,24
Use of explicit goals	4,14b,6		1,4,14b,16ab		4		1	1,16ab					28						1,4,5,14b
Use of behavioral contracts	4,14b,24	24	4,14b,24		4,24						24								4,14b,24
Checklist on homework	4,6,14b,24		4,6,24		4,6			6			6								24
Monitor performance	4,14b	6	4,6,14b,16ab,19		1,4,6		6	6,16ab,19			1,24,7								6
Provide encouragement	6	28	9,16ab,19,21,28		28	28		9,16ab,19,21,28				28		28					6
Correction and feedback	4,14b		1,4,14b,16ab,19		6		6	4,14b,16ab,19											6
Use of positive reinforcement	6,9,14b,24,15		1,6,9,12,14b,15,16ab,19,24		6		6	1,6,9,12,14b,15,16ab,19,24			6								6
Use of incentives/reward	4,6,9,24,15		1,4,6,9,15,16ab,19,24		6		6	1,4,6,9,15,16ab,19,24			6								6
Psychoeducation	15	4,9,12,14b,19,21,26,28		28	4,9,14b,21,26,15,19,28					15	4,14b		12,19		9,12,21,26,28				12,26
Discussion	6	9,19,26	9,12,13		28	19,26		6	9,13			9,19,26		9,9,26					6
Attribution of effort/cognitive modification efforts	25	9,9,12,26	25,28		28	9,28		6	25,28			9,12		9,9,28					12,25
Motivation of self-articulation/enhancement efforts	25	1,24,26	1,25,28		10	26,28		1,25,28						24,28					12,25,26
Communication training		28			28	28						28							28
Social skills training		28			28	28						28							28
Writing text			12,19		10			12,19			17								
Paired reading			4,9,12,13					4,9,12,13											
NS reading training	6		6					6											
Listening comprehension			12,13,19		10	10		12,13,19			17								
Reading aloud to someone			12,13,19,21		10	2	10	12,13,19,21			30	2							
Spelling			21		10	10		21			17								
Word recognition/orthographic			13,21		10	2	10	13,21			2								
Phonics training			21		10	10		21											
Letter training			21					21											
Word decoding			12,21					12,21											
Observation of learning/interaction		6			6	5,19						19							6
Transactive dialog	6	6	9		6			6											6
Account books		6																	
Storytelling			12					12											
Reading club		6										6							
Guidance of training in																			
Homework support: structure of discipline	4	1,4,6,9,12,13,14b			1,4,6,9,12,13,14b						1,4,6,12,14b	12		1,9,12,13				12,13	
Homework support: interaction training		4,12,13,14a,19,21		21	4,12,13,14a,19,21						4,5,16	12,19		12,13,14a,21				12	
Homework support: work environment		12			12									12					12
Parental involvement at home		1,4,6,9,12,13,14b,15,16a,19,21,24,28		20	1,4,6,9,12,13,14b,15,16a,19,21,24,28						1,4,6,12,14b,15,16a,19,24	6,12,19,28	24	9,9,12,13,21,21				12,13,25,26	
Parent of involvement at school		15			15						15								
Homework call/letter of communication		1,4,6,12,14b,15,24			1,4,6,12,14b,15		24				1,4,6,14b,15,24	12	24	6				12,21	
Other forms of parent training		9,25,26,28		28	9,25,26,28			6				9,25,26,28		9,25,26,28					25,26

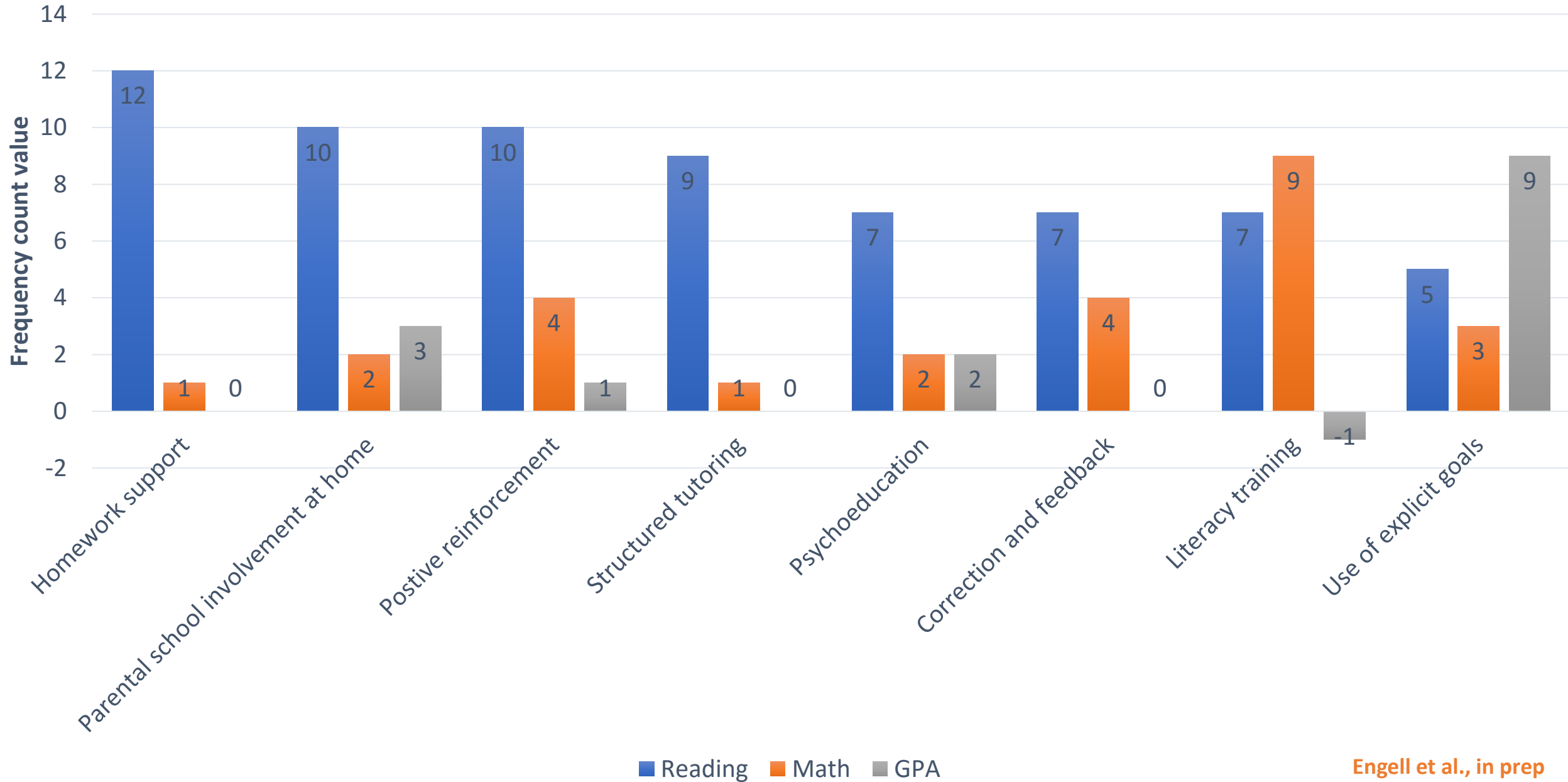
Common practice element	Definition of the practice element	Elements frequently associated with common practice elements				
		<i>Reading</i> (total studies=21)	<i>Math</i> (total studies=6)	<i>GPA</i> (total studies=5)	<i>Common process elements</i>	<i>Common implementation elements</i>

Homework support	Guidance in appropriate homework structure and discipline. Guidance in homework instruction and support	12 (N=1338) Frequency count value (FV)=12	1 (N=105) FV=1		<ul style="list-style-type: none"> Delivered by professional (4 y. training) (FV=12**) Received by caregiver (FV=11) Multicomponent (FV=10) Regularly support to receiver (FV=9) 1on1 delivery (FV=8) Less than 3 hours a week, more 4 months (FV=8) Use of organizational material (FV=8) 	<ul style="list-style-type: none"> Quality monitoring (FV=7***) Provide ongoing consultation (FV=7) Conduct educational meetings (FV=6) Conduct ongoing training (FV=5) Involve end-users (FV=4) Remind practitioners (FV=4) 	<ul style="list-style-type: none"> Training in parental school involvement at home (FV=11) Structured tutoring (FV=8) Use of positive reinforcement (FV=8) Use of incentives/rewards (FV=7) Monitor performance (FV=7) Correction and feedback (FV=7)
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Preview of results

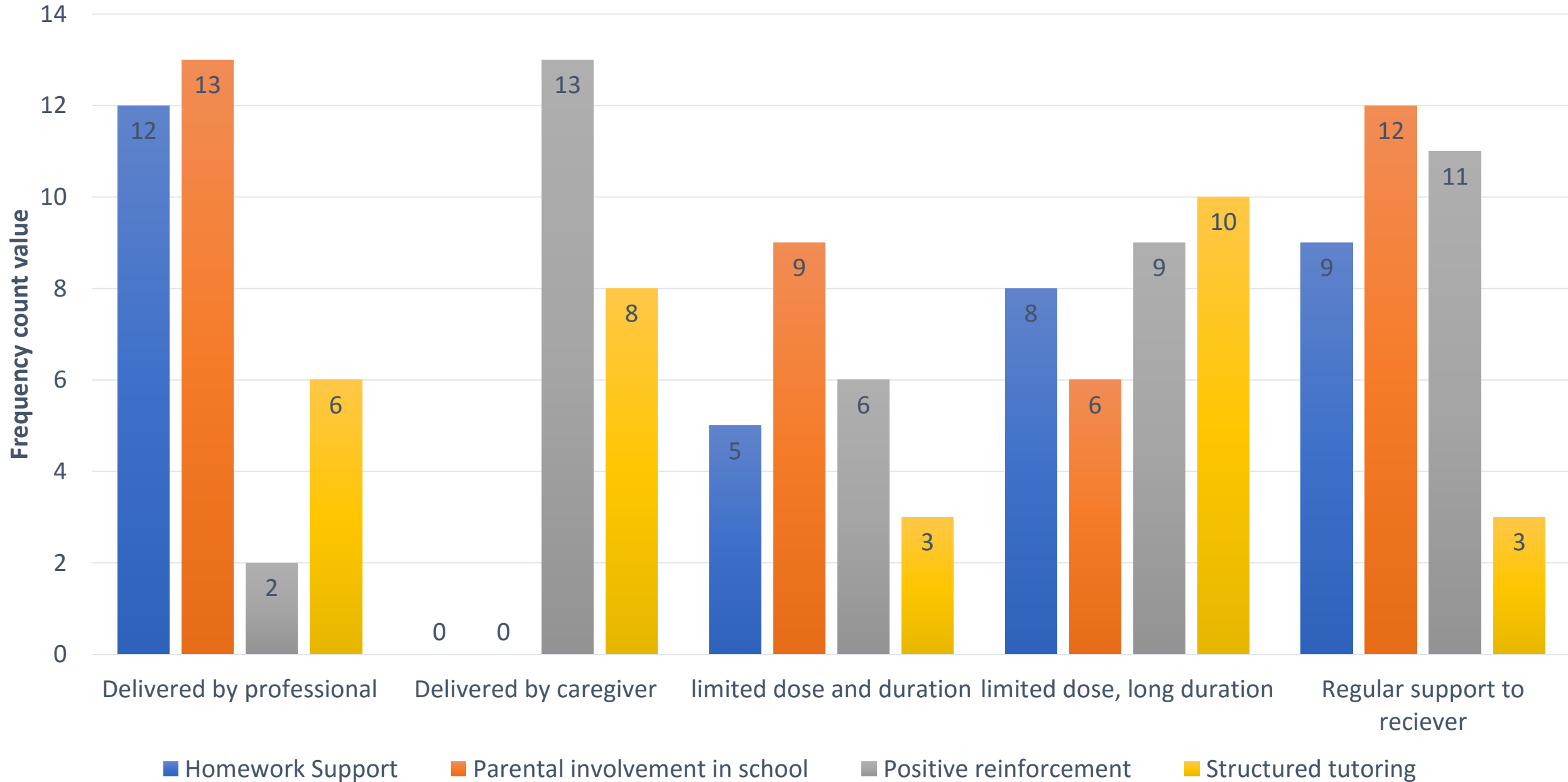
Training in parental school involvement at home	Training or guidance in any form of engagement by caregivers to support a child academically at home	10 (N=1194) FV=10	2 (N=177) FV=2	3 (N=56) FV=3	<ul style="list-style-type: none"> Received by caregiver (FV=14) Delivered by professional (FV=13) Regularly support to receiver (FV=12) Use of organizational material (FV=11) Less than 3 hours a week, less than 4 months (FV=9) Use of educational material (FV=10) Multicomponent (FV=10) 1on1 delivery (FV=9) 	<ul style="list-style-type: none"> Quality monitoring (FV=13) Distribute educational materials (FV=12) Provide ongoing consultation (FV=8) Remind practitioners (FV=5) Clinical supervision (FV=4) Conduct ongoing training (FV=4) Centralized technical assistance (FV=4) Involve end-users (FV=4) 	<ul style="list-style-type: none"> Psychoeducation (FV=10) Use of positive reinforcement (FV=9) Use of incentives/rewards (FV=8) Structured tutoring (FV=8) Training in homework structure and/or discipline (FV=7)
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Common practice elements in effective ÷ non-effective academic interventions

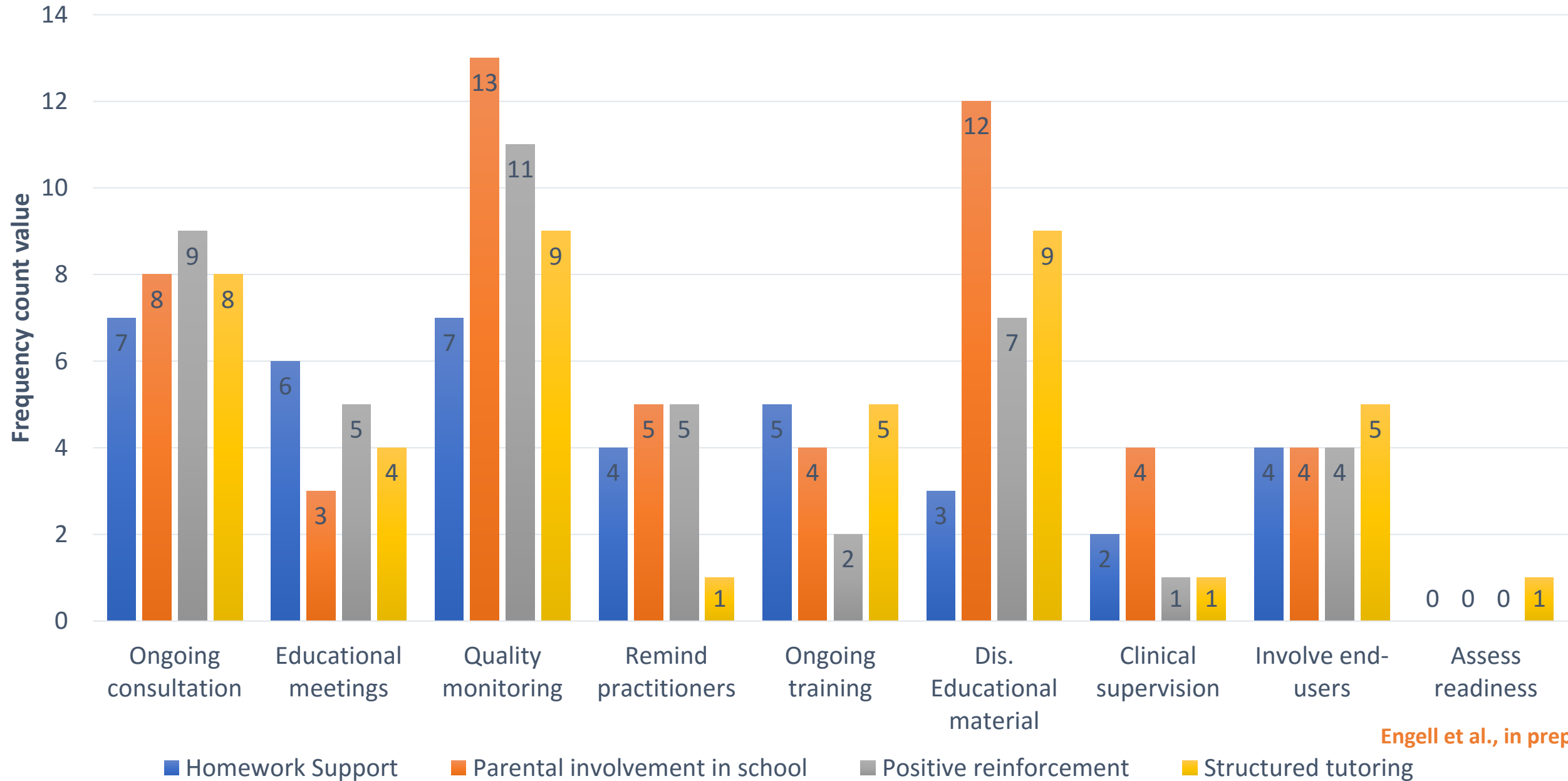


Process elements frequently associated with common practice elements in effective ÷ non-effective academic interventions

Engell et al., in prep

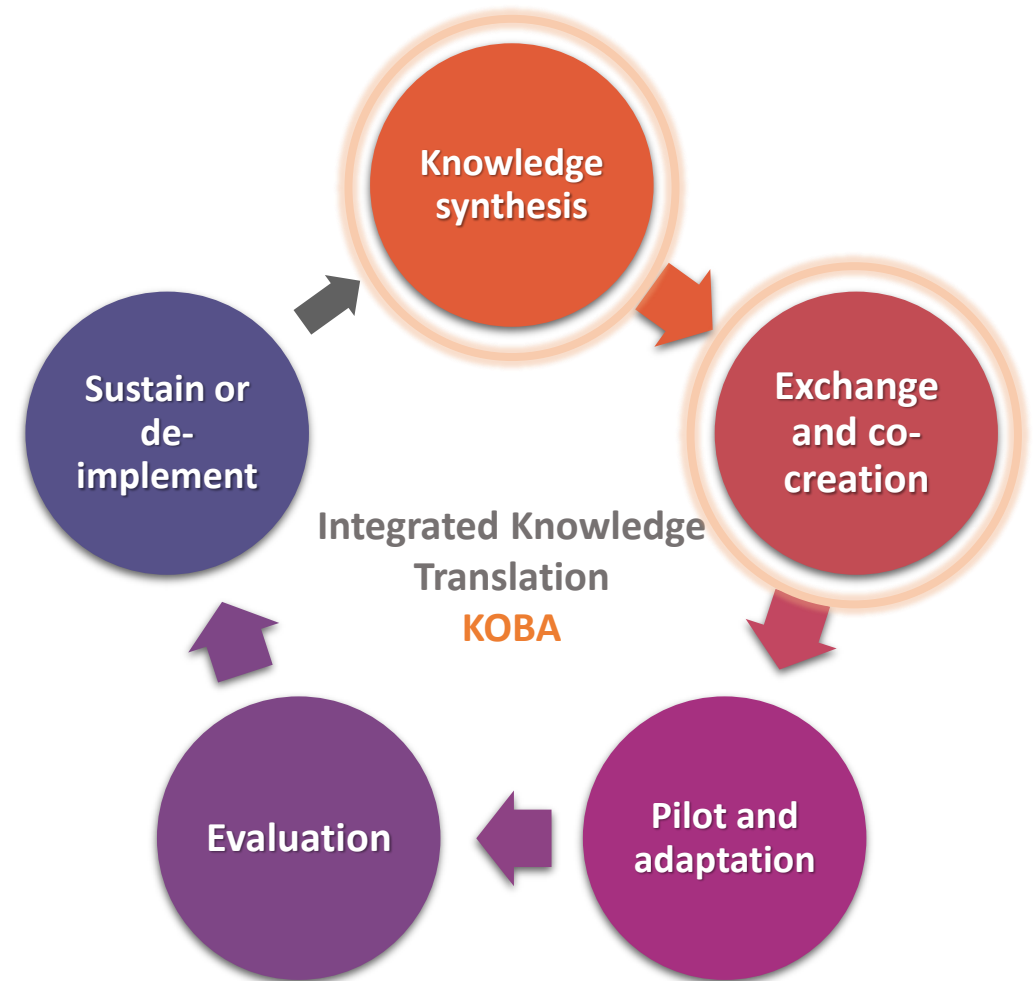


Implementation elements frequently associated with common practice elements in effective ÷ non-effective academic interventions



Common elements in the KOBA-study

- Knowledge synthesis to inform intervention-development
- Facilitated co-creation with stakeholders and former clients



Enhanced academic support (EAS)

Locally tailored lean and flexible intervention



- **4 Core elements** (based on common elements and factors)
 1. Guidance in positive parental involvement in school
 2. Structured tutoring in reading and math,
 3. Guidance in homework structure and routines
 4. Guidance in positive reinforcement, praise and feedback
- **Primary school children and their families**
- **Flexible integration in general practice**
- **Pragmatic practitioner-handbook**
- **Flexibility within fidelity:**
 - A basic structure with individual tailoring encouraged (sequence, dose, settings etc.)
 - Pre-defined adaptation alternatives
 - Eclectic adaptations encouraged
 - Dynamic double-informant fidelity monitoring

Evidence on the level of elements can enhance
implementability of interventions..

increase our reach..

..and promote **impact!**





Engell, T., Follestad, I.B., Andersen, A., & Hagen, K.A (in review). Knowledge Translation in Child Welfare: *Improving Educational Outcomes for Children at Risk*: Study protocol for a hybrid randomized controlled pragmatic trial

Engell, T., Hagen, K.A., Hammerstrøm, K.T., & Kornør, H (2016). Community- and home-based interventions for improving academic achievement in children at risk: A Systematic Review Protocol. *Prospero international prospective register of systematic reviews*

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Thomas Engell, PhD student

Regional Center for Child and Adolescent
Mental health, Norway

 te@r-bup.no

 @ThomasPatos

Limitations

- Does not assume isolated effectiveness of elements!
- Publication bias
- Poor reporting
- Study quality
- Non-randomized trials included
- Sequences not coded
- Evaluation design not optimal (factorial would be more appropriate)

References

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