

C&I PROJECT

IO2. MINDSET TOOL _ PROFESSIONALS

Agreement nº 2017-1-BE02-KA202-034722

Introduction and objectives

This report is formed by the following four sections (plus references):

1. **Measuring beliefs.** This section starts by showing several authors who suggest the advantages of likert scales to measure attitudes, beliefs, philosophies.... In addition, it is included several articles about measuring belief (or attitudes) which it is believed are highly related to the "Cognition&Inclusion" project issue, or that may influence the methodology for developing the intellectual outcomes.
2. **Theoretical models.** Many of the papers reviewed use a theoretical model supporting the research method. This report explains two models which focus on the importance of beliefs to produce a behavioral change: **Theory of Planned Behaviour**(Ajzen, 1991) and **The Health Belief Model**(Several authors)
3. **Questionnaire / Scale_ Framework proposal.** This section explainsthe work of J. Onwuegbuzie et Al., (2010). This article, in which a method to develop quantitative instruments is explained, has been cited 62 times in other academic studies.
4. **Proposal: development of the scale.** According to the theoretical framework reviewed in points 1, 2 and 3, a proposal of scale development is presented.

This report has been written by using academic studies found in Scopus database. The criteria used to find the articles (1.1. - 8.) has been "beliefs" sometimes "attitudes"; "professionals or teachers", "disability or learning barriers" and "Likert scales" within others. From 1.9. on, the articles were found and based on "mindset", "implicit theories", "self-efficacy", "beliefs on intelligence",...

The final purpose of this paper is not to set up the final method or tool to be developed by the partnership. It is to develop a framework in which to include a proposal to be discussed the 24th of September in Valencia.

1. MEASURING BELIEFS (OR ATTITUDES)

Although studies reviewed have shown there are several methods to measure beliefs such as "Observed behaviour" (Armitage and Conner, 2001), vignettes (Stuart, 2018), individual interviews using a semi-structured guide (Friedman and Sheppard, 2007), scenarios (Siminoff, Burant and Younger, 2004), protocols to identify beliefs..., it might be stated that **quantitative self-reported questionnaires or scales are the most common methods to evaluate beliefs.**

In this line of thought, Allison et Al. (2015), in their review of methods to measure beliefs and attitudes, states the current relevance of scales and questionnaires; Armitage and Conner (2010) state that the belief predictions are superior for self-reported (scales) than observed behaviour; and Mogoşe et Al. (2013) develop a theory and scale as a method to measure irrational and rational beliefs.

In addition, this report includes several articles about measuring belief (or attitudes) which we believe are highly related to the "Cognition & Inclusion" project themes (disability, transversal skills/cognition, learning, educators...). These articles might be very worthy to read and take into account for our project before starting to develop the intellectual outputs. As the reader will be able to see below, all of them are using likert-type scales to measure or modify beliefs (or attitudes).

1. Eakin, 2017: Development and validation of CF-Medication Beliefs Questionnaire: A mixed-methods approach.

Within the framework of the "Social Cognitive Theory", the author develops a questionnaire formed by six sub-scales and five domains: motivation, self-efficacy, perceived importance, and decisional balance to take or miss medications.

Method: The domains were created by studying previous literature and conducting 15 interviews. The sample used to validate the scales was 128 patients.

2. Manya C. Whitaker, Kristina Marie Valtierra, (2018) "The dispositions for culturally responsive pedagogy scale".

Scale development for teachers beliefs about diversity and/or inclusive education.

The scale development consists of a six-step process including item development, expert review, exploratory factor analysis, factor interpretation, confirmatory factor analysis and convergent and discriminant validity analyses. The sample used to validate the scale was 253 teachers.

The final scale contains 19 likert items across three dispositional domains: Disposition for Praxis, Disposition for Community and Disposition for Social Justice.

The article provides with the pre-items used to create the scale which some of them might be inspiring examples for C&I scales.

3. Hassanein, 2014. Changing Teachers' Negative Attitudes Toward Persons With Intellectual Disabilities.

The research used a 60-item likert-type scale, Attitudes Towards People with Disabilities (Alkoreity, 1992), which includes 24 positive statements and 26 negative statements about people with intellectual disabilities.

Remark*: The project application started with a similar 'problem definition' (see p.369):

- Teachers attitudes toward students with disability influence the likely success or failure of policies (was the / one of the starting points of our project – problemdefinition)
- Teachers attitudes toward disability affect their attitude toward inclusion, and the effectiveness of their inclusive practices
- Attitudes of teacher lead to 'low' expectations and so reduced learning opportunities, etc...
- Negative attitude interfere with the employment of persons with disabilities.

4. Rose, 2011. Health professionals' attitudes and emotions towards working with adults with intellectual disability (ID) and mental ill health.

Attitudes of staff towards people with ID in mental health services may be negative and negative staff attitudes may have a detrimental impact on service provision.

A questionnaire was designed to investigate the attitudes and emotions of staff towards delivering mental health care to adults with ID. It was completed by 84 staff from mainstream and specialist ID services.

The attitude scale consists of 25 'attitude' statements relating to the provision of mental health care to adults with ID. The wording of each statement implies either a positive (13) or negative (12) bias.

5. L. Strike, 2004. Mental Health Professionals' Disability Competence: Measuring Self-Awareness, Perceived Knowledge, and Perceived Skills.

The paper describes the mental health professionals' self-reported competence when working with clients with disabilities.

The Counseling Clients With Disabilities Survey (Strike, 2001) was developed because no measure of mental health professionals' disability competence was found. Diane Strike developed the CDDS scales of Self-Awareness, Perceived Knowledge, and Perceived Skills using a process of literature review and expert review.

Each of the three scales contains 20 items about which respondents express their agreement or disagreement on a 6-point scale (1 _ strongly agree to 6 _ strongly disagree).

Six sample items illustrate a positive and a reverse keyed item for each of the three scales. The Self-Awareness items, "I consider people with disabilities to be a minority group," and "It is difficult for me to understand how disability could be a source of pride for people with

disabilities,” address adherence to a minority model of disability and awareness of disability culture. The Perceived Knowledge items, “I believe that unemployment/ underemployment is common among people with disabilities in the U.S.,” and “I think English is the native language of Americans who are deaf from birth,” address knowledge of employment issues and language barriers. The Perceived Skills items, “I could take a client’s disability into account when interpreting the results of assessment instruments,” and “I am not aware how disability may interact with human sexuality (e.g., family planning),” address assessment skills and case conceptualization skills.

6. Stuart, 2018. A Cross-National Comparison of Attributional Patterns Toward Students With and Without Learning Disabilities. Journal of Learning Disabilities.

This article aims to raise awareness of the importance of attributional beliefs in relation to the educational outcomes of students with LD. The article uses as a framework the attribution theory.

The instrument that was used for this study was adapted from Woodcock and Vialle’s (2010, 2011) study that used a modified version from Clark’s (1997) original study investigating elementary teachers’ perception of the achievement of U.S. students with and without LD.

(N = 240) trainee teachers at the end of their training were surveyed with vignettes and Likert-scale questions to ascertain their responses to students with and without LD. Eight vignettes were created that described hypothetical boys who had just failed a class test. After the trainee teachers read the vignettes, they were asked four likert-type questions.

7. Neumark-Sztainer, 1999. Beliefs and attitudes about obesity among teachers and school health care providers working with adolescents.

The aim of this study was to assess and describe obesity-related beliefs and attitudes among school staff.

Beliefs were assessed with an eight-item scale (6-point likert scale) developed by Allison et Al. Attitudes towards obese persons were assessed with a modified version of Allison et Al. scale with 16 items (6-point likert). The 24 items are shown in the article.

The final study sample included 115 respondents (teachers, nurses and social workers)

8. Chin, 2002. Development of the Attitudes Toward Vegetarians

Although this study has not much to do with learning barriers or disability, the well-explained methodology to develop the scale and the kind of items used and the sample (N= 244 students) might be very useful to develop C&I scales and validate them.

The focus of this study was to develop a scale designed to measure attitudes toward vegetarians (ATVS). This scale measures a one-factor construct with adequate internal consistency. The ATVS correlated significantly with the construct of authoritarianism, and, as expected, the ATVS did not correlate significantly with social desirability.

The scales (ATVS) was formed by 21 items (7-point likert style).

9. Brown & Haywood, 1989. Development of an empirical scale of philosophies of education

This study very specifically starts from the idea that educators operate according to a set of assumptions about what they think 'education' is, why they do it, and what can be accomplished through it. These educational philosophies define a variety of teaching activities, including methods, contents, techniques of behavior management, (relative) optimism about the long term effects of their efforts on knowledge and behavior. The idea that 'educators' beliefs influence their teaching/supporting behavior to a great extent, is especially relevant when linked to learning challenges within 'disadvantaged' people.

The development of the scale was done within the context of preschool and cognitive education/transversal skills, but is easily generalizable to other contexts where 'learning' is a challenge.

The scale has been developed, starting from statements in 10 educational domains, written down by a small group of teachers. The domains are e.g. content of education, nature of the learning environment, modifiability of intelligence, student role, nature of learning,... 228 statements have been formulated, later on sorted according to domain, and reduced (according to a few criteria) to 54 items. The order of these items was randomized and formatted in a 5 point Likert scale (strongly disagree, strongly agree). 271 preschool teachers, administrators and university students were asked to indicate their level of agreement with each scale.

A principal components factor analysis was performed on the ratings of the participants. 18 factors (eigenvalue > 1.00) were extracted from the data on the initial analysis. 4 of these factors were defined adequately and were associated with a large enough percentage of the total variance to merit retaining them (teacher authority – referring to specific view of education, student independence – active learners versus passive recipients of information, parent participation and student interest).

The first two factors are highly aligned with the active modification approach as explained by Feuerstein.

10. Enea-Drapeaua.o. 2017. Implicit theories concerning intelligence of individuals with Down syndrome.

Starting point is evidence (studies over past three decades) that learning difficulties are not only determined by neurological disorders, but also by motivational and socio-cognitive factors. Among these, implicit theories of intelligence are key elements. The belief that intelligence is fixed (entity theory/fixed mind set, passive acceptance) versus malleable (active modification, growth mind set, incremental theory) is associated with negative teaching practices and poor 'student' outcomes.

This study assessed the beliefs about intelligence of Down syndrome and 'typical' people of 55 professionals and 81 non professionals.

The implicit theories of intelligence were assessed using 1.the Dweck's 8-item Theories of Intelligence Scale, measuring what people believe about intelligence in general (with 4 items on fixed, and 4 on growth mind set), and 2. an adaptation of this scale, all items referring to DS. Likert scale was used, strongly disagree 1, to strongly agree 6. Implicit attitudes were assessed using an association test (Greenwald e.a.1998).

Both groups see DS people as less 'maleable' (stereotypical judgement, and intelligence of DS is seen 'different'). The study shows that professionals are more positive, considering DS people more intelligent, educable and 'less stupid' than non professionals do.

The study is giving inspiration on the content of implicit theories of intelligence and judgments about intelligence toward people with DS. *Especially the finding that a growth mindset in teachers and students, school/training outcomes and teaching strategies can improve. (see relevance for an IO2 tool). The study suggests to include in further studies to investigate the beliefs of people with intellectual disabilities about their own abilities and intelligence. (IO 4)*

This study refers to several similar studies and reflections:

- Gutschall (2003) – teachers mindset for students with and without disabilities

Very interesting article as it refers to our problemdefinition : the perception, beliefs,... about the abilities and learningpotential of the 'students' has implication on the kind of interventions (quantity, quality, content,...). Author refers to growth and fixed mindset, self fulfilling prophecy,... teachers were asked to complete a Likert scale (6) based on the Dweckscale to assess their own mind set; next – with some 'stories' as basis, the same was asked about students (Michael will not improve his ability, e.g.) There was found a strong correlation between the mindset of the teacher and the perception of the ability to change within students.

Further research is useful to see if you can change mind set of a teacher, if this also has consequence for the outcome on student level.

- Greenspan (1983) – personal competence of institutionalized adult males with or without DS (could not find the paper)
- Enea-Drapeau (2014) – misleading face-based judgement of cognitive level in intellectual disability
- LynottD (1994) – teachers implicit theories of intelligence and their educational goals (could not find this paper, asked university to find it for me)
- Koestner R, a.o.(1995) -Theories of ability and the pursuit of challenge among adolescents with mild mental retardation (could not find this paper).

11. Developing the Educational Belief Scale – Yilmaz a.o.

This study aims to develop a valid and reliable scale to be used in determining educational beliefs of teachers. 455 (prospective) teachers were involved. After factor analysis, 5 factors were defined. 40 items were selected, a five Likert scale was used.

This article is interesting for it provides useful definitions of the concept of beliefs, being cognitions one gets in his relationship with the environment, and consist of the individuals past and present knowledge of an object. Beliefs are stronger than the effects of experiences in building human behavior (Bandura), affecting peoples manners. Studying teachers beliefs is important to understand teacher behavior.

Educational beliefs are based on educational philosophies, that orients education, shapes goals, leads education applications (why teaching what? Functions of education? Choice for program or methods,...)

12. De Castella & Burn, My Intelligence May Be More Malleable than Yours: The Revised Implicit Theories of Intelligence (Self-Theory) Scale is a Better Predictor of Achievement, Motivation and Student Disengagement.

The belief that intelligence is malleable has important consequences for achievement and motivation (Blackwell et al., 2007; Dweck, 1999; Robins & Pals, 2002). However, believing that it is possible to improve intelligence does not necessarily mean students are always confident they can improve their own. The current study presents a revised 'self-theory' measure of the implicit theories of intelligence scale, which assess students' beliefs about their ability to mould their own intelligence in contrast to their beliefs about the malleability of intelligence in general. In testing with 643 Australian high school students (62% female) ranging from 15 – 19 years of age ($M = 16.6$, $SD = 1.01$), the belief that intelligence is 'fixed' was predictive of lower endorsement of achievement goals, greater helplessness attributions and poorer self-reported academic grades. Fixed 'entity' beliefs were also predictive of academic self-handicapping, truancy and disengagement. On all of these measures, the new self-theory scale, uniquely explained greater outcome variance. These results indicate that students' implicit beliefs – particularly about their own intelligence – may have important implications for their motivation, engagement and performance in school.

13. Inclusive schools in action – chapter 4 – examining beliefs - McLeskey& Waldron 2000 (click [here](#))

This chapter is very inspirational as it describes a way of examining and changing beliefs regarding to schooling and inclusion for both teachers and **ADMINISTRATORS** (with important suggestions for IO2, 3 AND 4!)

Paper is on the role of teachers, their prejudices, goals of education, long term goals (societal and academic, relationship, problem solving, personal goals and independence!), willingness to teach in an inclusive setting,....,

14. Elliot, B & Chan K. (1998) – paper on 'epistemological beliefs in learning to teach'

This paper describes the development of a scale , with 4 subscales (belief in authority/expert knowledge, belief in certainty of knowledge, belief that learning requires significant effort), belief that ability to learn is innate) ([here](#))

2. THEORETICAL MODELS

Some of the academic papers reviewed in this report are based, totally or partially, on developed theories and models which offer theoretical support and framework to the research.

The use (totally or partially) of these theoretical models might be very useful for the C&I project for two reasons:

- Firstly, they provide a proved/tested/sound theoretical framework to the project which is highly valued by the community.
- Secondly, they provide a big deal of practical information to be used discretionally for the project (constructs, target group addressed, applications in teaching or disability, pre-items, suggestions, room for improvement, scales already tested...).

We present in this report several models which focused on the importance of beliefs to produce a behavioral change: **Theory of Planned Behavior**, **The Health Belief Model**, **Mindset Theory (C. Dweck)**, **Self efficacy-concept (Social learning and social cognition theory Bandura)**, **Structural cognitive modifiability model (Feuerstein et al.)**, **Presumed Competence model (Biklen & Burke)**,...

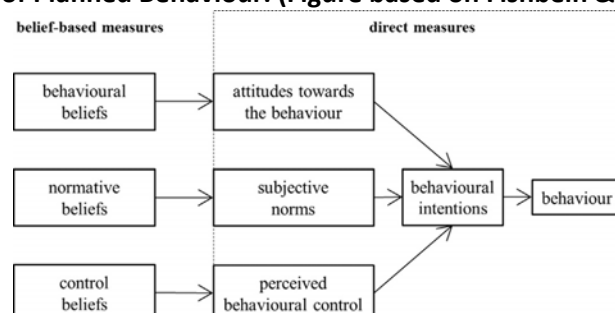
Others models or theories used in academic papers which might also be worthy for the project to consider are: **Theory of Interpersonal Behavior (Triandis, 1977)** or **Attribution Theory (Weiner, 1972; and other authors)**.

1. Theory of Planned Behaviour

According to Ajzen (1991), intentions to perform behaviors of different kinds can be predicted with high accuracy from attitudes toward the behavior, subjective norms, and perceived behavioral control; and these intentions, together with perceptions of behavioral control, account for considerable variance in actual behaviour.

The Theory of Planned Behavior provides an useful conceptual framework for dealing with the complexities of human social behaviour. This theory incorporates some of the central concepts in the social and behaviour sciences, and it defines these concepts in a way that permits prediction and understanding of particular behaviours in specified contexts.

The Theory of Planned Behaviour. (Figure based on Fishbein & Ajzen, 2010).



Direct measures of the behaviour:

- **Attitudes towards behaviours:** it refers to the degree to which a person has a favorable or unfavorable evaluation or appraisal of the behaviour in question.
- **Subjective norms:** it refers to the perceived social pressure to perform or not to perform the behaviour.
- **Perceived behavioural control:** refers to people's perception of the ease or difficulty of performing the behavior of interest. It is compatible with Bandura's (1977, 1982) concept of perceived self-efficacy which "is concerned with judgments of how well one can execute courses of action required to deal with prospective situations.

In addition, the theory postulates that behavior is a function of salient information, or beliefs, relevant to the behavior. Three kinds of salient beliefs are distinguished: behavioral beliefs which are assumed to influence attitudes toward the behavior, normative beliefs which constitute the underlying determinants of subjective norms, and control beliefs which provide the basis for perceptions of behavioral control.

- **Normative beliefs** are concerned with the likelihood that important referent individuals or groups approve or disapprove of performing a given behavior.
- **Control beliefs** may be based in part on past experience with the behavior, but they will usually also be influenced by second-hand information about the behavior, by the experiences of acquaintances and friends, and by other factors that increase or reduce the perceived difficulty of performing the behavior in question.
- **Behavioural beliefs:** attitudes develop reasonably from the beliefs people hold about the object of the attitude. Generally speaking, we form beliefs about an object by associating it with certain attributes.

According to the author, these salient beliefs must be elicited from the respondents themselves, or in pilot work from a sample of respondents that is representative of the research population. Moreover, in most applications of the theory of planned behavior, belief strength is assessed by means of a 7-point graphic scale (e.g., likely-unlikely) and evaluation by means of a 7-point evaluative scale (e.g., good-bad).

The Theory of Planned Behaviour has been used successfully to predict and explain a wide range of health behaviors and intentions including smoking, drinking, health services utilization, breastfeeding, and substance use, among others. But other authors has also used it in other fields more related to "Cognition & Inclusion" project such are the cases of:

- Heuckmann et Al., 2018. Using the theory of planned behaviour to develop a questionnaire on teachers' beliefs about teaching cancer education (2018). This study explored methodological challenges related to eliciting and assessing teachers' beliefs about teaching cancer education. The authors aimed to develop reliable belief scales, a methodological innovation in the context of the theory of planned behaviour.
- Conatser et Al., 2002. Aquatic Instructors' Beliefs Toward Inclusion: The Theory of Planned Behavior. The purpose of this article was to (a) examine aquatic instructors' beliefs (female, n = 82; male, n = 29) about teaching swimming to individuals with disabilities in inclusive settings and (b) test the theory of planned behavior model.
- Ermitage and Conner, 2001. Efficacy of the Theory of Planned Behaviour: A meta-analytic review. This article might be very useful to understand the efficiency of the Theory of Planned Behaviour. The authors also state that the prediction of self-reported behaviour through scales is superior to observed behaviour methodology.

Finally, we should also take into account the following limitations of the theory:

- It assumes the person has acquired the opportunities and resources to be successful in performing the desired behavior, regardless of the intention.
- It does not account for other variables that factor into behavioural intention and motivation, such as fear, threat, mood, or past experience.
- While it does consider normative influences, it still does not take into account environmental or economic factors that may influence a person's intention to perform a behaviour.
- It assumes that behavior is the result of a linear decision-making process, and does not consider that it can change over time.
- While the added construct of perceived behavioral control was an important addition to the theory, it doesn't say anything about actual control over behavior.
- The time frame between "intent" and "behavioral action" is not addressed by the theory.

It can be said that the Theory of Planned Behaviour has shown more utility in public health system than the Health Belief Model (see 2.), but it is still limiting in its inability to consider environmental and economic influences. Over the past several years, researchers have used some constructs of the Theory of Planned Behaviour and added other components from behavioral theory to make it a more integrated model.

Example.

According to the Theory of Planned Behaviour and C&I cognitive methodologies, we might cross both approaches to develop the scale. A simple and naive example of 3 items would be:

	Cognitive methodologies (Mediated learning experience)	Inclusion	Employment
Normative beliefs: are concerned with the likelihood that important referent individuals or groups approve or disapprove of performing a given behavior	My colleagues don't like the idea of a person with a learning disability making choices		
Control beliefs: may be based in part on past experience with the behavior, but they will usually also be influenced by second-hand information about the behavior, by the experiences of acquaintances and friends, and by other factors that increase or reduce the perceived difficulty of performing the behavior in question.	I am not able to plan a risk free environment for my clients		
Behavioural beliefs: Attitudes develop reasonably from the beliefs people hold about the object of the attitude. Generally speaking, we form beliefs about an object by associating it with certain attributes.	Memorizing has advantages over understanding		

2. Health Belief Model (Several authors)

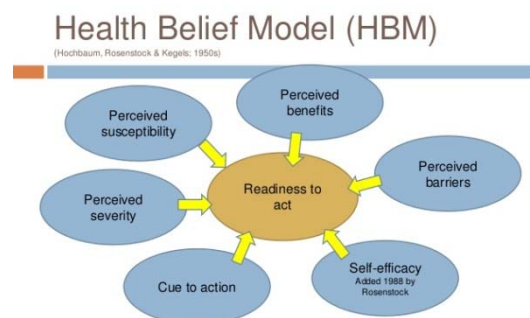
Although this theory is mostly based on health and the belief on personal threats, as social cognition model, it might be partially used to help to define/concrete the key beliefs behind professionals and how to assess them.

The model suggests that belief in a personal threat together with a belief in the effectiveness of the proposed behaviour will predict the likelihood of a behaviour.

The four key construct of the model are:

- Perceived susceptibility: an individual assessment of their risk of getting a condition (health problem)
- Perceived severity: and individual assessment of the seriousness of the health problem.
- Perceived barriers: an individual's assessment of the influences that facilitates or discourage adoption of the promoted behaviour.
- Perceived benefits: an individual assessment of the positive consequences of adopting the behaviour.

The model also suggests that a number of mediating factors such individual and social characteristics (age, sex, ethnicity...), self-efficacy (Person's belief that can achieve and sustain the behaviour) and cues for action (social factor, media information...) might prompt a change of behaviour.



Some theoretical constructs already developed and tested by this model such as the perceived barriers (or benefits) could be useful to define the beliefs the C&I project needs to assess. In addition, the concept of self-efficacy ("Health Action Model" also highlights the importance of self-esteem) might be worthy to consider in our project.

But, the model is too much focused on fear appeal (ethical barrier in our project) and does not specify how different beliefs interact and influence each other. In addition, it has not been possible to find academic papers which link this model with C&I project.

A similar paper from Schwarzer, R. is making the link between self efficacy, self regulation and several health behavior theories – referring to smoking, diabetes,...) (Schwarzer&Luszczynska, Perceived self-efficacy)

3. Structural Cognitive Modifiability theory – Active modification versus Passive acceptance approach (R. Feuerstein et al., esp, H.C. Hawyood, D. Tzuriel, P. Klein,...)

The theory of Structural Cognitive Modifiability (SCM) underpins Feuerstein's belief that individuals have the potential to change. It is helpful to focus on the three component parts of

“modifiability” “cognitive,” and “structural” to understand the approach that Feuerstein proposes. 1. Modifiability means having the ability to adapt, to alter, and to regulate. 2. Cognitive relates to the ability to think, reason, and learn. 3. Structural involves organization and integration of the components that make up our thinking. In linking these three concepts together, Feuerstein encourages us to think of all learners as having the potential to change or adapt, and appropriately regulate the way they think, learn, and apply their skills in different contexts. Feuerstein’s approach is not aimed at trying to overcome a particular difficulty or teach a specific skill. Rather, it is aimed at teaching learners how to learn in order to adapt their learning for different situations. The change that Feuerstein wants to bring about is at a basic or structural level and the emphasis is on cognition. Behavior and emotions change as a result of cognitive changes, and these can overcome the negative influence of genetic predisposition, physical impairments, or educational deprivation.

Description

The Theory of Structural Cognitive Modifiability (SCM) maintains that all humans can be modified, irrespective of the cause for any dysfunction or delay in their development. Whether it be exogenous factors (cultural differences, cultural deprivation or economic conditions) or endogenous factors (characteristics, chromosomal/genetic disorders, physiological conditions, age or condition of the brain), the theory postulates the modifiability of all human beings.

The basis for this theory is a belief system, and the main motive for the work of Prof. Reuven Feuerstein is the dire need to fight for each child, because, in his words, "too many children have been lost".

SCM explains deficient learning as the result of a lack of sufficient MLE (Mediated Learning Experience) before or during school years. Prof. Feuerstein observed that such deficiencies could be corrected, by providing mediated learning experiences by well-trained teachers combined with a battery of instruments, designed to enhance cognitive functions. In these learning tests, the child is exposed to a learning situation, and is taught how to go about dealing with the tasks.

When the results of these tests are analysed, it is possible to point out the child's capacity to benefit from the learning process, and thus to be modified. Once a child has learned the task taught during the test itself, then it is possible to measure to what extent that child will be able to learn other tasks, as well as to learn to relate to reality.

This theory became the basis for a whole dynamic approach to the assessment of human modifiability, now studied and applied in many academic institutions worldwide. The theory of SCM views the human organism as open to change. Its’ aim is to modify the individual, through autonomous and self-regulated change.

Intelligence is defined as a changeable state, rather than a permanent trait. Cognition plays a crucial role in human modifiability. Cognitive intervention can bring forth the modification of behavioral or emotional conditions. This theory states that learning ability can be significantly enhanced, regardless of age, nature, cause or severity of condition. It is based on the belief that all human beings can change and that their ability to function can be meaningfully developed through proper education.

Clinical observations have shown that the development of the thinking process is highly dependent on the nature and quality of the interaction within which stimuli are mediated by parents, educators or therapists.

The beliefs

1. Ideological continuum ranging from AM to PA

Passive Acceptance	Active Modification
<ul style="list-style-type: none"> • A belief that humans are essentially unmodifiable and unchangeable • A belief that an individual's future can be predicted on the basis of present and past levels of functioning • A tendency to use "because of . . ." statements, e.g., "Because of his genetic problems he will not be able to . . ." or "Because his father was alcoholic he will be . . ." • A very pessimistic view 	<ul style="list-style-type: none"> • A belief that human beings are flexible, open systems that have the potential to be modified • A belief that individual's are open systems that have the potential to be modified • A tendency to use "in spite of statements, e.g., "In spite of his genetic problems he is motivated to change . . ." or "In spite of his mother's absence he is receptive to mediation . . ." statements • A very optimistic view

2. Postulates

- 2.1. People are modifiable
- 2.2. People with a learning disability or challenged by an intellectual disability are modifiable
- 2.3. I, as a teacher, professional, educator, ... can modify my students, clients, ..
- 2.4. I can modify myself
- 2.5. Society can be modified

D. Howie in 'Teaching students thinking skills and strategies' (available in in C&I-dropbox) – describes principles (beliefs) on professional level and on organizational level – based on Feuersteins theory.

These principles inspire for the content of what we have to assess. Also here, besides organizational and policy related items, Howie stresses on elements of retarding versus modifying, challenging environments.

4. Carol Dweck - Mindset Theory

Intro

Your intelligence and other characteristics – where do they come from? Can they change? People vary in the degree to which they attribute the causes of intelligence and other traits. Are they innate and fixed factors ("fixed" mindset) or are they variable factors that can be influenced through learning, effort, training, and practice ("growth" mindset)? A "growth" mindset is generally seen as more advantageous.

Carol S. Dweck, a psychologist on the faculty at Stanford University, proposed mindset theory as a way to understand the effects of the beliefs that individuals hold for the nature of intelligence. This in turn has implications for learning and education.

(see <https://www.mindsetworks.com/>)

Mindset Theory – Fixed vs. Growth Mindset

Dweck proposed that the *implicit theories* that people hold for the nature and causes of intelligence have a number of implications, particularly for motivation to practice and learn. In her earlier research, Dweck identified “entity” and “incremental” theorists, based on whether individuals attributed success in tasks that required intelligent behavior to having sufficient native aptitude (entity) versus having practiced a skill and improving performance over time (incremental). Eventually, she proposed a theory of “mindset” to integrate a number of related ideas that she had developed over the years.

“Mindset” refers to implicit theories that individuals hold regarding the nature of intelligent behavior; to the degree that individuals attribute intelligence to fixed traits, they hold a “fixed” theory of intelligence (that is, a fixed mindset), and to the degree that they attribute intelligence to learning, effort, training, and practice, they hold a “growth” theory of intelligence (that is, a growth mindset). The terms fixed and growth mindset replaced the earlier terms for entity and incremental theories of intelligence.

- Individuals with a **fixed** mindset believe that their qualities (such as intelligence and other personality traits) are “set in stone”— how God made you is basically who you are. One’s traits are fixed — not something that can be practiced or developed. Individuals with a growth mindset, on the other hand, believe that effort or training can change one’s qualities and traits. Individuals with a fixed mindset tend to be interested only in feedback on their success in activities to the degree that it serves to evaluate their underlying ability. They are not using the feedback to learn, since they do not believe that their success depends on their effort to learn. Rather, they believe that success depends on the level of innate ability that they have. Therefore, they dread failure, because it suggests constraints or limits that they will not be able to overcome.
- A **growth** mindset, on the other hand, attributes success to learning. Therefore, the individual is not terrified of failure, because it only signals the need to pay attention, invest effort, apply time to practice, and master the new learning opportunity. They are confident that after such effort they will be able to learn the skill or knowledge, and then to improve their performance.

Messages to children can influence the development of mindset. If parents or teachers constantly seem to attribute success to inborn or innate abilities, children will come to develop a fixed mindset (“Johnny failed the math test because he is low on math ability”). Praise of a child’s performance can be particularly likely to produce a fixed mindset when it attributes the success to the child’s intelligence (implying aptitude or fixed traits). However, if parents or teachers attribute success to effort and practice, children will be more likely to develop a growth mindset (“Johnny failed the math test because he did not do his homework, but he will pass the next one because I will make sure he puts in the time and practices”). Praise of a child’s efforts to practice, or attributions of success that reference the prior practice in which the child engaged, can spur the child to develop a growth mindset.

Differences in mindset may affect broader issues as well, including how employers focus on hiring staff and in how politicians fund public education. Employers that hold a fixed mindset may focus more on investment in high ability employees and correspondingly invest less in professional development and ongoing training. Politicians who believe that the learning of which children are capable is limited by fixed traits may resist calls to improve funding for public education, perhaps considering such additional funding an unnecessary investment to try to improve fixed abilities. However, those same politicians might be willing to support spending on programs for the gifted when entrance to such programs is filtered by intelligence tests.

→Implicit theories of Intelligence scale for children (>10 y.) – ex of IO4

→Confidence in one's intelligence questionnaire – IO4?

(see appendices in http://humboldt-space.calstate.edu/bitstream/handle/2148/1654/hartmann_gretchen_m_Fa2013.pdf;jsessionid=E1894605FDF414D796D914AB44AA8F1D.server1?sequence=1)

→Mindset assessment profile : on Mindset Works – module 1 toolkit

(in addition:

Literature on Learned helplessness and Learned optimism is close to this mindset model, and gives – acc. to me – inspiration for item content. E.g. Seligman (1991) makes distinction between LH (learned helplessness) and LO (learned optimism).

LH = a pattern of giving up in the face of difficulty (blames self when things go wrong; failures are evidence of worthlessness; devalues attributes and accomplishments; focuses on weaknesses and mistakes; loses motivation in face of obstacles; increases stress and avoidance; feels overwhelmed and shut down)

LO = a pattern of persisting in the face of difficulty (sees bad events as unlucky, unfortunate; sees failures as part of life; gives self credit for attributes and accomplishments; focuses on strengths; maintains motivation to overcome obstacles; uses stress to push towards goals; works harder to find a solution)

It is significant that very much papers, theories are based on or refer to Dweck's model.

The paper (pre-pub) 'Implicit theories of Intelligence' (Martin et al) is a very good overview with definition of Implicit theories of Intelligence and the relation towards: self worth, task choice, resilience, adaptability, intrinsic motivation, persistence, attribution and mindset.

5. Albert Bandura – Social Learning Theory, Social Cognitive Theory and Self-Efficacy

Social Cognitive Theory proposes that individuals do not simply respond to environmental influences, but rather they actively seek and interpret information. Individuals “function as contributors to their own motivation, behavior, and development within a network of reciprocally interacting influences” (Bandura, 1999). Although Social Cognitive Theory covers many topics such as moral judgment and physiological arousal, research has been primarily focused on self-efficacy, or the beliefs regarding one's capabilities of successfully completing tasks or goals. Self-Efficacy was developed by Albert Bandura's as part of a larger theory, the Social Learning Theory, which has progressed into the Social Cognitive Theory.

Social Cognitive Theory

SCT emphasizes how cognitive, behavioral, personal, and environmental factors interact to determine motivation and behavior. According to Bandura, human functioning is the result of the interaction among all three of these factors, as embodied in his Triadic Reciprocal Determinism model. While it may seem that one factor is the majority, or lead reason, there are numerous factors that play a role in human behavior. The influencing factors are not of equal strength, nor do they all occur concurrently. For example, employee performances (behavioral factors)

Bandura's Triadic Reciprocal Determinism



are influenced by how the workers themselves are affected (cognitive factors) by organizational strategies (environmental factors).

The Social Cognitive Theory is composed of four processes of goal realization: self-observation, self-evaluation, self-reaction and self-efficacy. These components are interrelated, each having an effect on motivation and goal attainment.

- **Self-observation:** Observing oneself can inform and motivate. It can be used to assess one's progress toward goal attainment as well as motivate behavioral changes. Alone, self-observation is insufficient because motivation depends on one's expectations of outcomes and efficacy.
- **Self-evaluation:** Self-evaluation compares an individual's current performance with a desired performance or goal. It is affected by the standards set and the importance of the goals.
- **Self-reaction:** Reactions to one's performance can be motivating. If the progress made is deemed acceptable, then one will have a feeling of self-efficacy with regard to continuing, and will be motivated towards the achievement of their goal. A negative self-evaluation might also be motivating in that one may desire to work harder provided that they consider the goal to be valuable.
- **Self-efficacy:** One's belief in the likelihood of goal completion can be motivating in itself. "Self-efficacy refers to people's judgements about their capability to perform particular tasks. Task-related self-efficacy increases the effort and persistence towards challenging tasks; therefore, increasing the likelihood that they will be completed".

Self-Efficacy Theory

Self-efficacy beliefs are an important aspect of human motivation and behavior as well as influence the actions that can affect one's life. Regarding self-efficacy, Bandura (b.o.1995) explains that it "refers to beliefs in one's capabilities to organize and execute the courses of action required to manage prospective situations". More simply, self-efficacy is what an individual believes he or she can accomplish using his or her skills under certain circumstances. The basic principle behind Self-Efficacy Theory is that individuals are more likely to engage in activities for which they have high self-efficacy and less likely to engage in those they do not. According to Gecas (2004), people behave in the way that executes their initial beliefs; thus, self-efficacy functions as a self-fulfilling prophecy. For example, Employee A has high ability and a great deal of experience in creating graphs, but does not have confidence that he can create a high quality graph for an important conference. Employee B has only average ability and only a small amount of experience in creating graphs, yet has great confidence that she can work hard to create a high quality graph for the same conference. Because of Employee A's low self-efficacy for graph creation, he lacks the motivation to create one for the conference and tells his supervisor he cannot complete the task. Employee B, due to her high self-efficacy, is highly motivated, works overtime to learn how to create a high quality graph, presents it during the conference, and earns a promotion. Self-efficacy has influence over

people's ability to learn, their motivation and their performance, as people will often attempt to learn and perform only those task for which they believe they will be successful.

Judgments of self-efficacy are generally measured along three basic scales: magnitude, strength, and generality.

- Self-efficacy **magnitude** measures the difficulty level. How difficult is my class work? Are the quizzes easy or hard?
- Self-efficacy **strength** refers to the amount of conviction an individual has about performing successfully at diverse levels of difficulty. How confident am I that I can excel at my work tasks? How sure am I that I can climb the ladder of success?
- **Generality** of self-efficacy refers to the degree to which the expectation is generalized across situations. How sure am I that what I have learned will apply to my new tasks?

The basic idea behind the Self-Efficacy Theory is that performance and motivation are in part determined by how effective people believe they can be.

Bandura (1977) outlined four sources of information that individuals employ to judge their



efficacy: performance outcomes (performance accomplishments), vicarious experiences, verbal persuasion, and physiological feedback (emotional arousal). These components help individuals determine if they believe they have the capability to accomplish specific tasks.

- **Performance Outcomes:** According to Bandura, performance outcomes or past experiences, are the most important source of self-efficacy. Positive and negative experiences can influence the ability of an individual to perform a given task. If one has performed well at a task previously, he or she is more likely to feel competent and perform well at a similarly associated task. Success builds a robust belief in one's personal efficacy. Failures undermine it, especially if failures occur before a sense of efficacy is firmly established.
- **Vicarious Experiences:** People can develop high or low self-efficacy vicariously through other people's performances. A person can watch someone in a similar position perform, and then compare his own competence with the other individual's competence (Bandura, 1977). If a person sees someone similar to them succeed, it can increase their self-efficacy. However, the opposite is also true; seeing someone similar fail can lower self-efficacy.
- **Verbal Persuasion:** Self-efficacy is also influenced by encouragement and discouragement pertaining to an individual's performance or ability to perform. Also, the level of credibility directly influences the effectiveness of verbal persuasion; where there is more credibility, there will be a greater influence.
- **Physiological Feedback (emotional arousal):** People experience sensations from their body and how they perceive this emotional arousal influences their beliefs of efficacy (Bandura, 1977). Some examples of physiological feedback are: giving a speech in front of a large group of people, making a presentation to an important client, taking an exam, etc. All of these tasks can cause agitation, anxiety, sweaty palms, and/or a racing heart (Redmond, 2010). Although this source is the least influential of the four, it is important to note that if one is more at ease with the task at hand they will feel more capable and have higher beliefs of self-efficacy.
- (James Madduk has added a 5th route: **imaginalexperience** : visualizing yourself behaving successfully in a given situation)

Measuring Self-Efficacy

- **Skill Confidence Inventory scale (SCI).** The SCI scale measures perceived confidence to successfully complete several tasks, activities, and coursework. The SCI scale measures self-efficacy in the vocational domain and is used in career counseling. The SCI consists of six 10 item General Confidence Themes (GCT scales) (sixty items total). Each 10 item scale is scored by taking the mean of responses of each scale. GCT scales measure perceived level of confidence and range from 1 to 5; 1= No Confidence and 5= Complete Confidence. A score of 3.5 or higher implies a high skill confidence for that scale (Betz, Borgen, and Horman, 1996). Self-efficacy is described as domain specific. Indeed the SCI measures self-efficacy for the vocational domain.

- Generalized Self-Efficacy scale (GSE). One could say that it measures self-efficacy in adaptation, optimism, and coping in regards to facing adversity or everyday problems. The purpose of the GSE is to measure confidence in goal setting, effort, and persistence. (see C&I dropbox – resources – available in 33 languages)
- <https://www.uky.edu/~eushe2/Bandura/BanduraGuide2006.pdf> Guidelines for constructing self efficacy scales.
- 2011: SES new assessment tool (self efficacy survey –Panc et al.)https://www.researchgate.net/publication/271638283_Self-Efficacy_Survey_a_new_assessment_tool (interesting test construction proces)

6. Presumed Competence - Biklen& Burke

“There is no proof that the presence of a disability automatically confers an incompetent status. And many negative consequences result from our erroneous, unfair, and prejudicial presumptions. Children and adults with disabilities are segregated from the mainstream and isolated in special programs for treatments, interventions, and services. They may be prevented from engaging in the ordinary experiences most of us take for granted.”

Kathie Snow

Douglas Biklen and Jamie Burke defined "presuming competence" as believing that a person, regardless of disability, is intellectually capable and has the skills and motivation to manifest just as anyone in daily life .

Presuming competence is assuming that an individual has intellectual ability, providing opportunities to be exposed to learning, assuming he/she wants to learn and assert him or herself in the world. To not presume competence is to assume that some individuals cannot learn, develop, or participate in the world. Presuming competence is nothing less than a Hippocratic oath for educators and everyone involved in education, support,... It is a framework that says, approach each person as wanting to be fully included, wanting acceptance and appreciation, wanting to learn, wanting to be heard, wanting to contribute. By presuming competence, educators place the burden on themselves to come up with ever more creative, innovative ways for individuals to learn. The question is no longer who can be included or who can learn, but how can we achieve inclusive education. We begin by presuming competence.

"In light of the pessimism that surrounds the intellectual abilities of persons so classified, to presume competence is to step outside of conventional theory and practice": the most important thing for teachers or educators to do is not make any assumptions about a persons intellectual or other skill related abilities based on the diagnosis of a disability. Opportunities of self-expression and individual performance are significantly limited when the social environment makes wrongful assumptions.

There is a direct relationship between a student's self-efficacy and a teacher's or educators beliefs.

Best summary on presumed competence: can't be copied/can be printed– protected document - Kathie Snow <https://www.disabilityisnatural.com/presume-comp-1.html><https://www.disabilityisnatural.com/presume-comp-2.html><https://www.disabilityisnatural.com/presume-comp-3.html>

7. Expectations for students with cognitive disabilities. Is the cup half empty of half full? Can the cup flow over? Mc Grew and Evans, 2004, univ Minneapolis

Interesting paper dealing with the final question : what effect to teachers expectations have on students achievement? This paper **doesn't present a model**, but contains many 'models' and theories that are important for our tools (content) : self fulfilling prophecy/Pygmalion effect, affect-effect theory, bounded rationality and Cognitive heuristics, attribution theory, implicit theories of intelligence,...

Interesting also because of the 'critics on IQ' as single predictor of success.

The concept of "Ability conception" is new, refers to the individuals beliefs about the nature of one's cognitive related skills and abilities, including the view on how ones skills operate or work. This is extremely interesting. The ability of LD-people-conception.... but in this paper, again, authors refer 'continuously' to Dweck... again... Is the content of our IO1?

3. QUESTIONNAIRE / SCALE_FRAMEWORK PROPOSAL

In this section is presented the work of J. Onwuegbuzie et Al., (2010). It presents a meta-framework study which might be very helpful for the project when planning or developing the tool. Authors have created the "Instrument Development and Construct Validation (IDCV)" process for optimizing the development of quantitative instruments. This instrument uses mixed research techniques that consists of 10 interactive phases:

1. Conceptualize the construct of interest.
2. Identify and describe behaviors that underlie the construct
3. Develop initial instrument
4. Pilot-test initial instrument
5. Design and field-test revised instrument
6. Validate revised instrument: Quantitative analysis phase
7. Validate revised instrument: Qualitative analysis phase
8. Validate revised instrument: Mixed analysis phase: Qualitative-dominant crossover 1. analyses
9. Validate revised instrument: Mixed analysis phase: Quantitative-dominant crossover 2. analyses
10. Evaluate the instrument development/construct evaluation process and product

Meta-framework for instrument development/fidelity and construct validation.

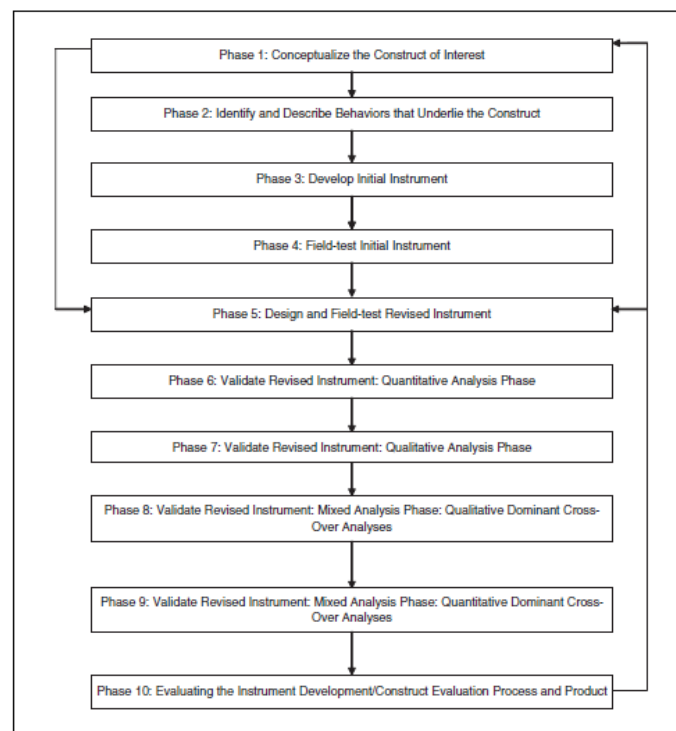


Figure 1. Instrument development and construct validation (IDCV) process

The authors following show a complex form of combining quantitative and qualitative data analysis techniques—referred to as mixed analysis in which is stated that the crossover analyses necessitate the researcher to mix or combine a strong use of quantitative and qualitative assumptions and stances.

Table 2. Crossover Analysis Strategies by Validity Type

Validity Type	Type of Crossover Analysis
Criterion related	
Concurrent validity	Data correlation, data comparison
Predictive validity	Data correlation, data comparison
Content related	
Face validity	Integrated data display, warranted assertion, data integration
Item validity	Data comparison, warranted assertion, data integration
Sampling validity	Integrated data display, data comparison, warranted assertion, data integration
Construct related	
Substantive validity	Data consolidation, data comparison, warranted assertion, data integration
Structural validity	Integrated data reduction, data transformation
Convergent validity	Data correlation, data comparison
Discriminant validity	Data correlation, data comparison
Divergent validity	Data correlation, data comparison
Outcome validity	Data transformation, data consolidation, warranted assertion, data integration
Generalizability	Warranted assertion, data integration, data importation

This Crossover analyses comprise the following techniques:

- Integrated data reduction (i.e., reducing the dimensionality of qualitative data/findings using quantitative analysis and/or quantitative data/findings using quantitative analysis).
- Integrated data display (i.e., visually presenting both qualitative and quantitative results within the same display).
- Data transformation (i.e., converting quantitative data into data that can be analyzed qualitatively and/or qualitative data into numerical codes that can be analyzed 58 Journal of Mixed Methods Research 4(1) statistically).
- Data correlation (i.e., correlating qualitative data with quantitized/quantitative data and/or quantitative data with qualitized/qualitative data).
- Data consolidation (i.e., combining or merging multiple data sets to create new or consolidated codes, variables, or data sets).
- Data comparison (i.e., comparing qualitative and quantitative data/findings).
- Data integration (i.e., integrating qualitative and quantitative data/findings either into a coherent whole or two separate sets of coherent wholes),
- Warranted assertion analysis (i.e., reviewing all qualitative and quantitative data to yield meta-inferences).
- Data importation (i.e., using follow-up findings from qualitative analysis to inform the quantitative analysis or vice versa).

4. PROPOSAL: DEVELOPMENT OF THE SCALE

4.1. Previous considerations and possible points of discussion.

- Many of the articles found are working within a theoretical framework (theory of planned behaviour, social cognitive theory/self efficacy, SCM, Mindset, Presumed competence...) They are useful for the following reasons:
 - They provide not only a theoretical framework, but also practical information and tools developed within this framework.
 - Many of these theories were born within an organizational context which it means they could be very useful for the IO3.
 - It would be also important to state a definition of belief. The theoretical frameworks presented (or others) may help the project with the definition, explanation and evaluation of "belief".
 - In addition, a theoretical framework might be the needed link among the IO2, IO3, IO4. Based on a theory (or several), partners could write report to be presented and approved in Finland. The report might have the following parts:
 - a) The theoretical frameworks used by the project;
 - b) The definition of belief and sub-beliefs: Normative beliefs Control beliefs, Behavioural beliefs, perceived barriers, self-efficacy, social desirability, growth mind set, presuming competence...;
 - c) The definition and explanation of cognition, inclusion and employment (we are pretty sure that not all the partners understand the concept of "employment" in the same way);
 - d) The objectives of the tools;
 - e) The methodology to develop the tools: how to develop the pre-items, items...
 - f) A proposal of the final tools.
- According to the literature reviewed, Likert Scales seem the most common method to assess beliefs (or attitudes)
- It might be understood the C&I project is formed by three independent constructs (or domains) to assess: beliefs on cognition, on inclusion and on employment. We believe it is important to define and explain them (at least 1 page per each construct). Do they have sub-domains? A clear definition of the domains (and sub-domains) would be very useful for the project partners, but also to find the pre-item of the scales.
- According to the literature exposed, these pre-items might be developed by studying academic papers, asking our local experts, by doing interview to our professionals or developing focus groups.
- It is understood from the articles reviewed that C&I sample (250 professionals) is statistically enough to validate the scale, in case the project partners agrees to validate it. But it is also believed that partners, previously, will have to make a huge effort to define the constructs and find the proper pre-items. If this previous work is not well defined, planned and executed, the statistic analysis may come out with a negative result.

- We would like to highlight the relevance shown by several studies of two constructs: self-efficacy and social desirability (Further information about this concept can be found in Paulhus, 1984) . We believe both constructs must be taken into account when developing the tools.
- One issue partners have to bear in mind is the dependence between the objectives of the scale and the type of the final tool. Once partners set up the objectives (and the research method) it will be able to tackle other questionnaire questions such as:
 - Anonymous (or not), identification questions: age, gender, qualification, profession...;
 - Presentation, objectives, ethical issues and instructions of the questionnaire;
 - Structured, semi-structured questionnaire...;
 - Self-administered or not;
 - Logic order by construct with questions linking the constructs;
 - From General to specific questions;
 - Maximum length of the questionnaire;
 - Positive/negative questions to verify the consistency of the answers;
 - Unipolar fashion questions (e.g., from 1 to 7, or from 0 to 6) or bipolar fashion questions (e.g., from - 3 to +3) (Ajzen, 1991);
 - Type of Likert questions: 5-point, 7-point..., Yes/No questions, mark preferences from a closed list...;
 - Number of open ended questions (mixed questionnaire), if they are needed;
 - How to codify the answers.

4.2. Scale development proposal.

4.2.1. Construct to measure

The scale will measure two theoretical constructs (or sets of constructs):

1. "Implicit theories on intelligence of LD adults" – referring to active modifiability, presumed competence (both also relevant for organization tool), mindset/malleability of intelligence (relevant for IO2 and 4)
2. "Quality of life" – referring to beliefs of the professional (and the organization, and the client) to **inclusion** and to **employment of LD adults**
(But only three domains of quality of life (Shallock) will be taking into account: Social inclusion, Rights, Material well-being: employment)

BUT...

According to what we learned and see 'on the floor', what people 'believe' on the concepts above, is highly influenced (correlation) by their OWN mind set and their self efficacy regarding their responsibility. Therefore, I suggest to assess (as part of this tool) the mind set and the self efficacy of the one who is completing the scale.

So it we be needed to define and explain several domains/concepts/constructs:

- Implicit theories on intelligence of people with LD (including content referring to : presumed competence, malleability, active modifiability)
- Self efficacy
- Mind set
- Social inclusion / Employment

(for IO4 – client, alignment is possible for mind set, self efficacy, beliefs on (their) social inclusion and employment)

We will develop the items of the questionnaire according to these domains.

One remark: I suppose we can add more domains and do a toolkit of 5/6 scales belonging to 5/6 different domains. In addition, the scales would be able to be used individually. The only problem I see is that each domain needs a minimum number of items, so 5 domains could be at least 50 items. Respondents could finish the try-out very tired and negatively influence their answers. Anyway, analysis factor, after the try-out will tell us how many domains we have got.

4.2.2 Questionnaire and items

- It will be developed a 5-point Likert scale. Respondents will indicate the strength of agreement or disagreement regarding to an indicator.

Example 1. I believe that memorizing has advantages over understanding

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly disagree

- The scale will be formed by half positive items and half negative items.
- The type of items will be developed partially based on the Theory of planned behaviour:

FINAL SCALE ITEMS COMPOSITION	Social inclusion	Material well-being	Cognition education approach
Self-efficacy/Control beliefs: may be based in part on past experience with the behavior, but they will usually also be influenced by second-hand information about the behavior, by the experiences of acquaintances and friends, and by other factors that increase or reduce the perceived difficulty of performing the behavior in question.	3/4 items	3/4 items	3/4 items
Behavioral beliefs: Attitudes develop p reasonably from the beliefs people hold about the object of the attitude. Generally speaking, we form beliefs about an object by associating it with certain attributes.	7/8 items	7/8 items	7/8 items
Social desirability	5 items		

- It is considered also to add qualitative items: asking about preferences, ranking behaviors or making the choices that professional might make in certain preferences.

4.2.3. Phases

1. Definition of the construct and domains

To write a document defining and explaining what is the theoretical background, relationship among the concepts, the scope, implications, ... for the project of the following concepts:

- Implicit theories on intelligence **of people with LD** (including content referring to : presumed competence, malleability, active modifiability)
- Self efficacy **of professional** (behavioral beliefs, control beliefs)
- Mind set **of professional**
- Social inclusion / Employment (QOL) **of clients with LD**
- ??? Social desirability: assessment if professionals are telling us what they think we want to hear, instead of their true beliefs.

It might be a 5-page document.

This document is key to find the items. experts and professionals will provide the project with behaviors depending of the definition of the domains we give to them.

2. Items development

The items will be developed with the following methodology:

- The study of existing literature and other scales to find professionals behaviors, perceptions, statements... linked with the domains.
- 20 interviews with professionals and experts to add new professionals behaviors (10 in Valencia and 10 in Kortrijk). The interviewer explains the domains to the professionals and find out which professionals behaviors (beliefs??) might be associated.
- Local expert group discussions.
- Turning the behaviors into items.
- Filtering all this information in a reasonable number of items. (e.g. see Brown study)
- Scoring the items. Passing the definitive items to 20 professional and experts to obtain a score of every item, eliminating those with less score.

EXAMPLE: I believe that memorizing has advantages over understanding

Not important item							Very important item			
0	1	2	3	4	5	6	7	8	9	10

3. Building the scale

The final step is to build the scale:

- a) Writing instructions for the respondent and creating the convenient fields such as: gender, age, professionals category, years of experience.
- b) The first try-out to 5 professionals to improve the final design, instructions...

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