



Review of the Literature on Young People,  
Education And Learning to Inform the SORT It  
Programme

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# Summary: Key Lessons from the Literature Informing the Programme

The literature reviewed for this programme makes clear that despite the many challenges facing some young people in Ireland today, in suitable environments, every young person has the ability to reengage as effective learners. In order to create such an environment, we have taken several key lessons from the literature in order to inform this programme. Key lessons are as follows:

## Key Lessons: Programme Content

1. There are many factors that contribute to early school leaving in adolescence, which in turn can contribute to poor workplace performance in later life. These include coming from lower socioeconomic background, coming from lone parent families, coming from families with low levels of parental education as well as previous negative experiences with teachers and schools. In order to become a fully engaged young adult within society, adolescents must move through certain developmental stages. There are many potential threats to the adolescent brain, which can slow down or stop this development, including poor physical health and nutrition, mental illness, substance abuse, early childhood trauma and toxic stress. Despite these threats, the adolescent brain shows considerable resilience and given certain conditions, adolescents can overcome these challenges. The aim of this programme is to re-engage young people who have become disaffected by traditional education. No matter what an individual's past experiences has been, all young people have the ability to benefit from this programme and from education in the future. Youth Work services are an ideal, complementary setting for this programme to be delivered
2. Toxic stress is one of the many key inhibitors of learning, and developing techniques to manage this can support young people to engage in learning. A key element of this programme is learning to use simple techniques to manage stress, to help young people effectively manage difficult situations arising in learning or workplace environments
3. A large amount of literature has suggested that metacognition, the process of "thinking about thinking", can be used to re-engage young adults as effective, independent learners. In practice this means learning how to plan, implement and review problem solving and learning skills. This programme aims to put these skills into practice by learning to set goals and objectives for learning and problem solving, to plan an approach to a problem and to review whether this approach was successful. Along with learning to manage stress reactions, this is the basis of the SORT It model.
4. The literature tells us that learning meta-cognitive skills is most successful when it's applied to a range of scenarios, and best taught in a way that is collaborative and cooperative. Videos developed specifically for this programme show the application of metacognitive and problem solving strategies, using real-life scenarios from the lives of young people. The programme also relies on encouraging young people to collaboratively and cooperatively reflect and apply learning to scenarios from their own lives, and look at developing alternative constructive strategies in the future.

## Key Lessons: Approach to Delivering the Programme

1. Trauma informed care is a model for providing services and education that accounts for the fact that most people will have experienced some form of trauma, and will often be in states of heightened stress. Key principals of trauma informed care include: safety, trustworthiness and transparency, peer support, collaboration and mutuality, empowerment as well as cultural, historical, and gender sensitivity. *This programme aims to be trauma informed at all times in its delivery to participants; this means that at all times the tutor will aim to ensure young people while on this programme feel safe, trusted, not judged and accepted.*
2. The most successful educational settings are those in which there are positive teacher-student relationships, contributing to an overall positive learning environment. *It is a fundamental aim of this programme that there is mutual respect shown between both instructors and participants, but also between participants themselves.*
3. The benefit of access to a supportive adult in a time of need is crucial to young people. Research has identified that having “one good adult” in a young person’s life can act as a buffer during significantly stressful life events. *Through the provision of this programme, all young people will have access to a stable and available adult.*
4. As part of the ‘visible learning’ framework, learning programmes should contain specific learning intentions and success criteria. As well as this, learning strategies which provide both teachers and students with feedback tend to be most effective. *The current programme will contain specific learning objectives for each session and exercise. Both students and the instructor will have the opportunity to give and receive feedback as the programme develops.*
5. Looking to other programmes and modules which have incorporated elements of metacognition, it is of crucial importance that facilitators understand the concept of metacognition in order to engage participants on this topic. *Following the reading of the literature review, facilitators should have a clear understanding of metacognition and related concepts mentioned in the review.*
6. The aims of this programme are in line with national strategy in Ireland for youth work, Youth Work centres are appropriate settings for the delivery of psycho-social education for young people. Youth Work can promote pro-social behaviour and support young people with the practical skills to navigate education and employment environments. *The SORT It model can be successfully delivered as part of a broader Youth Work curriculum.*

# 1 Introduction to the Literature Review

This literature has been developed so that tutors of the *SORT It* problem-solving skills programme can have a thorough understanding of the evidence behind the model. It begins with a context on youth unemployment in Ireland and its consequences on young people. It then goes on to explore normal adolescent development as well the potential difficulties some young people face throughout childhood and adolescence. Following this, it outlines research on difficulties experienced in education and learning by young people who may have faced early adversity. Finally, this review aims to highlight some effective interventions that have been used to support young people in their learning and into the workplace.

## 2 The Context: Young People Out of Work

### 2.1.1 The Situation of Young People in Ireland & the EU

Late adolescence into early adulthood is a marked period of transition for young people. The movement of young people from formal education and training into a working environment represents a significant challenge. As a result, young people are likely to experience some degree of employment instability and are more at risk of unemployment than older adults. As recent as January 2016, Central Statistics Office figures indicate that 19.1% of young people aged 15-24 in Ireland are unemployed (1). This figure rose dramatically from 9.1% in 2007, to 24% in 2009, continuing to increase to 30.4% by 2012 (2).

At the time of developing the *SORT It* programme in 2016, Ireland, along with countries such as Spain, Bulgaria and Italy, still had a NEET (not in employment, education or training) population that would be considered to be 'very high' (greater than 17%) by EU standards (3). Being unemployed as a young person has personal, societal and economic impacts. The personal impact is that young people can deskill in the short term, cause greater levels of unhappiness and can lead to reduced chances of future employment (2). The economic impact is that this can lead to greater pressure on welfare services as well as decreased productivity. The impact of this on larger society is that it can lead to a more fragmented society in the longer term (2).

In terms of the personal cost of unemployment, research has identified a type of 'scarring' that can take place as a result of spells of youth unemployment. This is due to the longer-term effects of factors such as happiness, job satisfaction, wages and health (4). However, clearly, unemployed youth are not a homogenous group; the consequences of unemployment are not equal for all young people. Indeed, it has been suggested that for socially disadvantaged youth who may not have completed education, to 'fail' at their first attempt in the labour market may make them most susceptible to 'scarring' for future employment (5). Clearly, as a group, socially disadvantaged young people who are NEET should be of particular importance when designing interventions aimed at unemployed youth.

### 2.1.2 Skills Needed for Work & the Contribution of Youth Work

The difficulties experienced by young people who are NEET shows a need to develop programmes that enable young people to transition into the labour market effectively, and to empower young people, particularly those who are socially disadvantaged, to stay longer in education and prevent future spells of unemployment. Rather than focussing on the hard or technical skills, we now know that there is a need to focus on the importance of 'soft skills', 'life skills' (6) or even individual characteristics and traits (3). These skills include team-work, adaptability and flexibility, self-confidence and intercultural skills, all of which are traditionally developed in youth organisations rather than formal education settings (7). In fact, many of the skills developed in young people with the support of Youth Work services correspond to those most frequently demanded by employers (8).

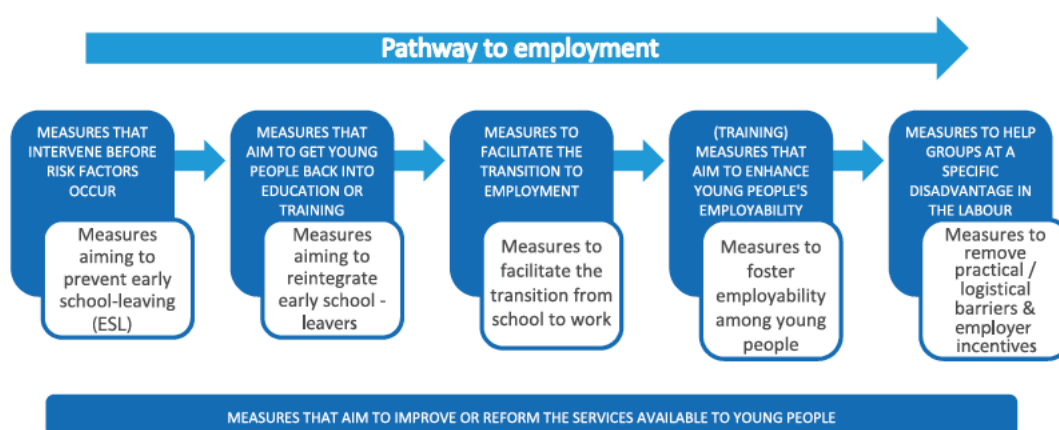
Clearly, a problem still exists in Ireland regarding the numbers of young people currently not in employment, education or training. This offers an opportunity for youth work to play a part in addressing the problem by reaching out to those most at risk of 'scarring' by unemployment using innovative and creative interventions.

## 2.2 Young People, Learning and Employment

### 2.2.1 Education & Employment

Any potential intervention to support young people in relation to employment or education should have the ability to either prevent young people from leaving the path to employment, or alternatively bring them 'back on track' after they have left to continue to develop their skills. The educational-employment 'pathway' is shown in the diagram below:

Figure 1. Measures to enable young people's employment.



Source: Eurofound, 2012b

The reason this educational pathway is so important is clear: access to employment is closely associated with educational attainment<sup>(9)</sup>. In Ireland, employment rates of those who left school before completing their leaving certificate (60%) is lower than those who completed their leaving certificate (84%), which in turn is lower than those who went on to complete third level education (90%)<sup>(5)</sup>. Furthermore, educational attainment not only affects a young person's ability to gain employment but is also a predictor of the *quality* of employment they have access to<sup>(5)</sup>. Therefore it seems sensible to firstly take a preventative focus on retention in education and preventing Early School Leaving (ESL).

### 2.2.2 Poor Performance in Education & Employment

Barriers to retention in education for young people are categorised in three ways: individual or family barriers, institutional barriers or environmental barriers<sup>(10)</sup>.

#### **What are the personal and environmental factors that contribute to early school leaving?**

Personal and environmental factors for dropout in education have been found in many different research studies. Such situations include where the young person:

- Comes from lower socioeconomic status families, particularly lone parent families<sup>(11)</sup>,
- Has a history of school leavers in the family<sup>(12)</sup>, low levels of parental education<sup>(13)</sup>.
- Experienced a lack of supervision, limited parental involvement in schooling and lower parental aspirations<sup>(10)</sup>
- The young person dislikes coming to school<sup>(14)</sup>
- The young person has psychological difficulties<sup>(14)</sup>

- Having peers who are early school leavers (11)
- Are members of the Travelling community (11)
- Are affected by financial impact such as being a parent, or the loss of welfare entitlements due to being at school or college(15)
- Have difficulties with substance use, homelessness, health or disability(15)

Clearly, disentangling the different causes for early school leaving is very difficult, with many early school leavers experiencing many of these factors. Whatever the cause, school absenteeism is detrimental to academic attainment and remains a significant predictor of early school leaving (Hancock et al. 2013). Overall, there are many diverse reasons that young people perceive as barriers to entering and sustaining educational programmes. Archer, et al. (2005) conclude: *"Disengagement, non-attendance and underachievement were underpinned by a complex interplay of multiple factors, which spanned social, cultural, educational and other fields"*

### **What are the institutional factors that contribute to early school leaving?**

While there are many personal and environmental barriers to young people staying in education. Recently, much research has moved to focus on the role of the school or institution in retaining students (11). Factors include:

- Negative experiences with *teachers and their schools* (16)
- *Lower teacher expectations* as well as poor pupil-teacher relationships were characterised by higher dropout rates (17).
- *A school environment which only 'values' high academic success* (18)

As well as individual relationships, the manner in which schools are set up also appears to impact on student retention. Schools which involve students in decision making through prefect systems have also been found to have lower early school leaving rates (17). Academic engagement (e.g. student participation in research) has been found to be effective at all levels of schooling and is of particular benefit to retaining minority students in third level university courses(19).

Finally, a lack of support, information and professional guidance has also been cited by students as a significant barrier to education. This barrier appears across all levels with young people first citing it as a reason for not pursuing particular educational paths. Furthermore students also perceived a course or educational programme did not meet their expectations, lack of support, information or guidance deterred them from staying in a chosen educational course, leading to dropout. This barrier was identified in a survey completed by the UK Dept. of Innovation, Business and Skills(15) and was particularly strong in young people who described themselves as 'looking for learning opportunities'.

### **How does this impact on performance in employment?**

While early school leaving makes it more difficult for young people to find employment, it certainly does not mean that employment is not possible. A survey conducted by the ESRI (2001) found that 43% of firms in the manufacturing services had said they have employed an early school leaver in the previous two years. This compares to 40% of firms in the Hi-Tech manufacturing sector, 37% in hotel/restaurant sector and 31% in construction. The lowest representation of early school leavers was in the financial/insurance and business services (10%) (20). Therefore, clearly there are jobs to be found for those who for whatever reason have left school at a young age. This raises the question of how these early school leavers perform when they do find employment.

The same ESRI report investigated employer's perceptions of early school leavers under a number of personal characteristics. In summary it found that the majority of employers' experience of having employed an early school leaver were quite positive. They were rated highly in terms of their honesty, ability to fit in/general personal skills and teamwork (20). Rated

less highly were their reliability, timekeeping and initiative with smaller firms taking a more positive view to early school leavers than larger firms. O'Shea and Williams (2001) suggest that this may be due to the ability of the smaller employer to adopt a more supportive and "hands-on" approach to their employees(20).

## 2.3 Adolescent Development & 'Emerging Adulthood'

### 2.3.1 Overview

Adolescence is a period of development more rapid and substantial than any other time period in terms of behaviour, cognition and the brain (21). In order for adolescents to become a fully engaged young adult within society, a role that in Western societies is expected to be fulfilled by the late 20's, they must meet several developmental tasks of adolescence(22). The concept of developmental tasks, first put forward by Havighurst (1948) (23), refer to the normative or culturally defined activities or goals expected during certain periods of the life course. While this theory is decades old, these key developmental tasks have largely remained the same.

### 2.3.2 Adolescent Developmental Tasks

While there are multiple developmental tasks of adolescence, it is important to note that these are not completed in a step-wise fashion, rather an adolescent may be dealing with a number of tasks at any given time.

The types of developmental tasks put forward by Havighurst (1948) are:

- Adjusting to a new physical sense of self
- Adjust to new intellectual abilities; their thinking moves from somewhat constrained and concrete to being able to understand more abstract concepts
- Deal with increased cognitive demands of school life as well as expanded verbal skills as they prepare for further education or the working world
- Establishing a personal sense of identity
- Managing sexuality
- Achieving emotional and psychological independence from his/her parents
- Establish adult vocational goals; a task achieved much sooner for some than others
- Develop stable and productive peer relationships which are of peak importance during adolescence and can predict adjustment in other areas of psychological and social adjustment
- Develop a personal value system, which initially is taken from parents but subsequently is assessed and adjusted by the adolescent).

Clearly there are many suggested tasks that must be negotiated throughout adulthood. Havighurst's (1948) main assumption was that development is continuous throughout the entire lifespan, occurring in stages, where the individual moves from one stage to the next by means of successful resolution of problems or performance of developmental tasks. While at the time what was not known, but is now clear from neurobiological studies that in fact the brain does continue to develop and change according to its environment throughout adolescence and early adulthood, known as brain plasticity. Furthermore, it also has the capacity to re-enter plastic states (i.e. become changeable), in an effort to mitigate negative experiences later in life (24). There are a number of threats to the developing brain, which can affect how adolescents move through the various developmental tasks and therefore can affect them long into adulthood. These will be discussed below and in particular with respect to their effect on cognitive development and learning.



### 2.3.3 Physical Health, Nutrition and Cognitive Development

Previous research has well established a link between nutrition and cognitive function. In fact as soon as early infancy, nutrition has been suggested to play a critical role in mediating brain growth and development. Toddler and pre-school years have been identified as particularly important as these ages see rapid changes in the brain, important for the acquisition of fundamental cognitive and interpersonal skills.

Regarding the type of nutrition that is required to promote healthy cognitive development, breastfeeding has long since been associated with healthy cognitive development that last into adolescence. Healthier diets at one-year-old predicted better cognitive performance at age 17. Nutrition in adolescence appears to be equally important with higher intakes of 'western' style diets (e.g. fried foods, processed meats etc.) associated with lower cognitive function while high fruit and vegetable intake associated with higher cognitive function (25).

### 2.3.4 Mental Illness and Substance Abuse

Adolescence is often regarded as the most important juncture in the emergence and trajectory of mental illness. There has been research within Ireland and the UK that suggests the prevalence of mental health problems to be widespread among adolescents(26). This has been further supported by figures from the My World Survey of Irish young people which found that 30% of Irish young people reported some level of depression (11% mild, 11% moderate, 8% severe) (27). Similar figures of 32% of Irish young people reported some level of anxiety. This concerning figure has a number of implications. Firstly, anxiety or depressive disorder during adolescence confers a strong risk for recurrent anxiety or depressive disorders during early adulthood (28). Furthermore, due to the common symptoms of depression such as inability to concentrate, lack of interest, psycho-motor retardation as well as low self-esteem, adolescent depression negatively impacts on school performance and consequently produces maladaptive outcomes in terms of subsequent education and occupational functioning (29). Middle adolescence depression has been significantly associated with poorer reading and writing skills, as well as difficulties in concentration, social relationships and self-reliant school performance(29).

Coinciding with these major developmental transitions, most people view adolescent and early adulthood as the period when alcohol consumption is most common and acceptable(30). Indeed looking at Irish figures, the My World survey found that 48% of youths in sixth year of secondary school and over 60% of young adults reported drinking behaviour outside the normal range(27). As well as this, self-reported depression and anxiety were higher in those young people who reported harmful levels of drinking. Heavy drinking during adolescence does have a small, but significant, damaging effects on adolescent neurocognitive functioning: research has demonstrated that adolescent heavy drinkers show reductions in memory capacity, attention, information processing, and executive functioning later in life(31)

Clearly adolescent alcohol consumption along with mental ill health pose significant threats to the developing adolescent brain.

### 2.3.5 Early Childhood Trauma and Toxic stress

The relationship between Adverse Childhood Experiences (ACEs) and later cognition and learning in adolescence and adulthood has been well established. ACEs are(32):

- Physical abuse
- Sexual abuse
- Emotional abuse

- Mental illness of a household member
- Problematic drinking or alcoholism of a household member
- Illegal street or prescription drug use by a household member
- Divorce or separation of a parent
- Domestic violence towards a parent
- Incarceration of a household member

Many studies have found a relationship between the numbers of ACEs experienced during childhood and poor outcomes linked to lower educational attainment and poorer employment opportunities (33). In relation to academic achievement, Birnbaum et al. (2003) suggested that as a result of these adverse childhood experiences, young people may not develop the social and emotional skills necessary for learning. As a result, they may become agitated and even aggressive in the face of frustration with learning new concepts/skills. This in many cases leads to punishment in the form of suspensions causing the student to fall further behind in coursework and into a cycle that is difficult to break (34). Indeed, social and emotional competence has been directly linked to school readiness which itself is linked to early school success and even later performance in the workplace (35).

A household study of nearly four thousand UK adults showed that nearly half (46.4%) reported to have experienced at least one ACE and nearly one in ten (8.3%) had experienced four or more(36). With so many children experiencing some form of ACE, this raises the question as to why some children and adolescents appear to have much better outcomes than others. The National Scientific Council on the Developing Child has classified childhood stress responses into positive, tolerable and toxic. A positive stress response can be seen in response to mild to moderate stress such as a child receiving an immunization; central to positive stress response is the presence of a supportive adult to comfort the child which facilitates the stress of the body to return to normal (37). The presence of a stable and supportive adult here transforms this stressful experience into a growth promoting experience typical of normal development. Tolerable stress responses typically are seen in response to more severe stressors such as family illness, bereavement, and divorce/separation. While these events activate the stress response in children and can be considered ACEs, the presence of a supportive and stable adult can again buffer the harmful effects of stress and eliminate the risk of long term consequences on health and learning(37).

Toxic stress response occurs in children in response to frequent, or prolonged activation of the body's stress response systems, importantly this occurs without the buffering of a supportive adult (37). A suggested result of toxic stress is a disruption in children's brain circuitry and other organs (as stress affects the whole body), which Shonkoff and Garner (2012) suggest causes biological changes which are the precursors for later impairments in learning and behaviour as well as physical and mental ill-health. The authors argue that both ACEs and toxic stress environments impact the neural network of the developing brain. Such changes in the brain, are understood to alter an individual's ability to withstand stress in later life(24). Animal and human studies have found heightened cortisol (the main stress hormone) levels affected the frontal part of the brain as well as overall reduced brain size associated with early and ongoing adolescent stress. Exposure to stress hormones can exert a negative impact whether it occurs prenatally, during infancy, childhood, adolescence and even into adulthood(38).

**Despite these potential threats, the adolescent brain shows considerable resilience and given certain conditions, adolescents can overcome these difficulties to become effective learners. Some emerging research in this area is discussed below.**

### 2.3.6 Resilience and Brain Plasticity

The impacts of adverse beginnings in life have been discussed at length above. However these risk factors appear to be mitigated by the presence of stable, supportive adults in the lives of

young people (39). This suggestion has been supported by numerous research studies that have found that young people benefit hugely from the presence of 'one good adult' in their lives(27). The suggestion here is that rather than social disadvantage contributing to academic performance directly, the social and emotional difficulties associated with various risk factors may make it more difficult for children to develop the 'concrete mental operations' such as basic reading skills required for further progression in education (39).

Furthermore, while ACEs have been found to cause structural changes to the developing brain, it is now understood that the brain can 're-enter plastic states' under the right circumstances and mitigate these negative consequences(24). Indeed, recent experimental research has challenged what was previously known about brain circuits, which were previously considered to be resistant to re-mapping or re-wiring. Numerous lab-based studies have suggested that the adult brain can in fact adapt to challenges in its environment, which is defined as resilience(24). These findings are encouraging, and make the case for attempting to target those who may have experienced ACEs in an effort to mitigate their negative consequences. This will require creating the right environment for learning to occur, which is discussed next.

## 2.4 Trauma Informed Care / Person Centred Learning

### 2.4.1 What is trauma informed care/teaching?

Given the abundant research on ACEs and how prevalent they are in the general population, and on the impact of toxic stress, addressing the impact of early trauma on children is a vital and often overlooked role of all child-serving systems, not least the education system (40). Trauma-informed care as a concept has been created in recent years due to increased incidences of trauma in society in general (41). The Substance Abuse and Mental Health Services Administration (SAMHSA; 2015) states:

*"When a human service program takes the step to become trauma-informed, every part of the organization, management, and service delivery system is assessed and potentially modified to include a basic understanding of how trauma affects the life of an individual seeking services."*

The creation of trauma-informed child-centred service can be challenging for schools as they attempt to balance their primary role of education with the unfortunate reality of students who need help dealing with toxic stress which prevents them from engaging in the learning process(40). SAMHSA (2015) outline six principles of a trauma-informed approach which can be adopted by any organisation;

- Safety
- Trustworthiness and transparency
- Peer support
- Collaboration and mutuality
- Empowerment, voice, and choice
- Cultural, historical, and gender issues

One of the core components of creating a trauma-informed learning environment is to gain the commitment of all levels of staff at a service or school. It cannot be the responsibility of school guidance counsellors or social workers alone. This includes the role of management to create a safe environment, ensuring continuing education of staff regarding the needs of students impacted by trauma. The responsibilities of tutors in these settings are to identify those students affected by trauma and support them as well as creating a safe, warm environment. Built into a school wide trauma-informed environment, teachers should use exercises such as positive imagery, deep breathing and re-grouping which broadly fall under the category of coping skills. Teachers should attempt to foster a sense of community within the classroom,

whereby students feel that both their teacher and peers are available to them. This social learning ensures that young people begin to build a network for times whereby they experience stress in the future (41).

### 2.4.2 The Importance of 'one good adult'

The positive results of trauma-informed services and schools in terms of improving coping skills as well as psychological wellbeing are certainly welcome, however they should not be hugely surprising. As briefly mentioned previously, the My World Survey: the national youth mental health study in Ireland, conducted by Dooley and Fitzgerald (2012), noted the presence of a supportive adult in a time of need as crucial to young people. Young people who reported to having this "One Good Adult" in their lives also reported significantly higher life satisfaction, higher self-esteem, and more useful coping strategies (27). Importantly, 18% of Irish young people reported to having low or very low support from a significant adult, and this group showed far higher avoidant coping strategies, which itself is linked with the use of alcohol or drugs (27). Clearly, trauma-informed care in schools and other services as well as providing stable and available adults could be of enormous benefit to young people.

## 2.5 Fostering a Safe, Supportive & Positive Learning Environment

### 2.5.1 Overview

Early research, which examined early school leaving as well as poor academic performance has typically tended to focus on many of the risk factors described earlier in this report. It is now accepted in the literature of educational psychology that where barriers exist for students to learn, they are not the sole responsibility of the student themselves. Fostering a safe, supportive and positive learning environment are crucial for the success of disadvantaged and non-disadvantaged youth alike. A growing body of literature has examined what factors contribute to the creation of such an environment within schools and institutions.

### 2.5.2 Factors that contribute to a positive learning environment

Research in the area of education has expanded so rapidly the number of new concepts and definitions with regard to education may lead to a false perception that "everything seems to work"(42). Instead Hattie (2009) identified six key areas that are crucial for fostering a positive learning environment:

- The student
- The home
- The school
- The teacher
- The curriculum
- The approaches to learning

Many of the factors that contribute to the student and the home have been discussed in the previous section in terms of barriers. However as important, if not more so is the role of the school, teacher and curriculum. As mentioned previously, teacher expectations as well as positive student-teacher relationships are crucial to the development of a positive learning environment. Students who feel a strong personal connection with their teachers are more likely to show greater engagement in learning, to exhibit more positive classroom behaviours and ultimately to display higher levels of academic achievement(43). Positive teacher-student relationships are also protective against behavioural problems in school, as well as risk taking behaviour in adolescence (44,45), both of which themselves predict poor academic performance.

However possibly the most important element in the creation of positive learning environment comes from both the curriculum and the approaches to learning. Hattie (2009) suggested that curricula should be based on specific learning intentions and success criteria. Furthermore he suggested learning strategies work best when both teachers and students seek feedback on their work from other students and teachers, a theory Hattie called 'visible learning'. As part of Hattie's (2009) 'visible learning' study, he put together more than 800 meta-analyses related to achievement and from this, ranked 138 factors which influence learning and achievement. The top ten ranked influences in order of impact on performance include: Student self-reported grades (student expectations), Piagetian programmes (cognitive development programmes), response to intervention (early intervention for struggling students), students perceptions of teacher credibility, formative evaluation (providing feedback during the learning process), classroom discussion regarding lessons, reciprocal teaching and feedback. This large scale study highlights the importance of appropriate cognitive strategies to learning, as well as feedback and monitoring of such strategies. These concepts are discussed in the next chapter in relation to metacognition in learning.

Research in this area supports the creation of a climate of mutual respect, in which students feel relaxed in asking questions and expressing their thoughts and feelings (Stronge, 2002). These concepts can be expanded to not just the education system but any institution or facility where learning takes place. For example any potential intervention to work with NEET young people could still ensure consideration of the student (or client), the home, the school (institution), the teacher (youth worker), the curriculum (the programme) and the approaches to learning.

## 2.6 Metacognition as a Learning Strategy

### 2.6.1 Defining metacognition

As outlined in the previous chapter, there has been an increasing focus on the strategies by which students learn. Metacognition was initially described by Flavell (1979) as "cognition about cognitive phenomena", or in basic terms "thinking about thinking". Metacognition, enables us to use prior knowledge and information (which makes up basic cognition) to plan an approach to solving a particular learning task, then to monitor our progress, evaluate the results and change strategy if needs be(46). Metacognition is comprised of metacognitive knowledge, and metacognitive monitoring or regulation, as explained in the following paragraphs.

**Metacognitive knowledge:** Flavell (1979) breaks metacognitive knowledge into three components:

- "Person variables" refers to what we know about how humans process information, specifically what one believes about one's own learning process,
- "Task variables" refer to what one believes about the nature of the task and
- "Strategy variables" refers to knowledge about what strategies would be most useful in completing a task(47).

An example of these three elements at work is: an individual (person variable) is aware they are weak at a word problem task (task variable), therefore they may attempt other problems first and save the word problems for last (strategy variable)(46).

**Metacognitive monitoring or regulation:** this refers to the planning, monitoring and evaluation of cognitive activities to ensure that the desired learning outcome has been achieved. An example of this(47) would be a learner attempting to understand a paragraph of text (cognitive goal). After reading the text, she may ask herself questions about the meaning of the text (an example of metacognitive monitoring). If she decides that she did achieve the

desired learning from the paragraph, she must now decide the best strategy to help her achieve her goal (for example does she read the last line or the whole paragraph again?). After re-reading, the reader should self-question again to evaluate her learning and this time she may determine that she understands the material and has achieved her cognitive goal. Flavell (1979) described this activity as a sort of mental "quality control".

Research in this area has also found close links between metacognition and concepts such as critical thinking (the ability to deductively reason) and motivation (the attribute that moves an individual to do or not to do an activity)(48). Another closely related concept is that of self-regulated learning, described as the use of self-assessment and self-evaluation on the learning process(49). Clearly, these constructs have large areas of overlap and there is a growing consensus towards the use of the definition of self-regulated learning, which Boekaerts described as the combination of cognitive, metacognitive and motivational processes which work together during information processing(50).

The relationship between the above concepts and learning has proved difficult to disentangle, occasionally leading them to appear as "fuzzy". One point on which there is no disagreement is their association with successful learning.

### 2.6.2 The role of metacognition in learning

It has been suggested that it is through metacognition, the process of "thinking about thinking", that real learning takes place(46). For lifelong, independent learning to take place, the learner must take responsibility for their learning and have the skills to maintain, control and direct their learning, which requires the learner to have the metacognitive skills discussed previously. This highlights the importance for learning to be focussed both on developing new knowledge, as well as developing metacognitive learning skills.

Some basic metacognitive skills have been observed in children as young as 3-5 years old (51). Despite these early signs, the development metacognition is a very gradual process(48). Lai (2011) suggests that the ability to monitor and regulate learning is slower to develop and may remain incomplete in some adults. Those adolescents and young adults who develop good metacognitive abilities can become more independent learners. As they have a wider range of metacognitive skills, tend to do better on exams and work more efficiently as they can select the appropriate strategy for a task, identify any difficulties and modify learning strategy if needed.

### 2.6.3 Evidence for the role of metacognitive skills in learning and workplace performance

The development of metacognitive skills is associated with successful learning. Successful learners have a wide repertoire of strategies to choose from and can apply these to new settings (52). There have been several large meta-analyses which have demonstrated the effectiveness of the application of metacognitive strategies. An analysis of more than 20 studies involving over 1,500 students found that metacognitive instruction had substantial effects on students reading awareness comprehension(53). The authors found the most effective metacognitive skills were awareness of inconsistency, known as textual-dissonance, as well as the use of self-questioning as a monitoring strategy. There were numerous metacognitive skills cited in this analysis although the authors recommend using a variety of diverse techniques for best results. These effects were largest for older students (although still significant at all ages) further supporting the suggestion that metacognitive abilities are developing throughout adolescence.

A more recent Meta analysis by Dignath et al. (2008) examined the effect of self-regulated learning interventions on primary school students in 48 intervention studies. They found self-

regulated learning programmes to have a positive effect on academic performance, strategy use, and motivation with good effect sizes. They also showed the interventions that integrated different aspects of learning, including metacognitive and motivational aspects were the most successful(49). The same study found that programmes that provided students with feedback around their learning tended to be most effective, as well as those programmes that explicitly illustrated the benefits of applying the strategies. The authors suggest this is in line with previous research in this area, suggesting student's "need the *skill* and the *will* to engage in self-regulated learning". This is in line with Hattie's key factors of reciprocal teaching and feedback, student perception of teacher and programme credibility, and formative evaluations(42)

The development of metacognitive skills (as with any skill) progresses at different rates in different people, as well as in different knowledge domains depending on personal experience. Despite individual differences, it has been demonstrated that it is possible to produce better learners through instruction in metacognitive skills (54). These strategies remain useful not just for students, but have also been used in the workplace to facilitate learning. Indeed most of the research regarding developing metacognitive skills in adulthood has focused on the development of metacognitive regulation or monitoring, assuming perhaps that the adult will have already established their metacognitive knowledge(55). However, facilitating adults to understand that old routines may not be effective and adopt new routines can be challenging, and so metacognition must be embedded into activities and tasks across the curriculum/intervention(56). There are numerous metacognitive concepts that could be taught which are well suited to problems faced in the workplace(54). One concept described by Dawson (2008), are ill-structured problems, which are open-ended problems with unclear goals and no single "right" answer, similar to many of the problems faced in the workplace. Argyris (1980) suggested that few people are aware of the 'maps' or 'theories' they use to guide their actions in the workplace. He suggested a theory called *Double-loop learning* which proposes the necessity for organisations and workers to evaluate their current strategies and if necessary change strategy to become more efficient at their work; very similar to metacognitive strategies discussed above(57). Argyris (1980) argues these strategies are necessary if workers are to make decisions in often rapidly changing and uncertain work environments. Indeed these are important considerations regarding effective teaching of metacognitive skill, which must be considered when designing an intervention for young people.

#### 2.6.4 Evidence based methods for teaching metacognitive skills

There has been a consistent body of research that suggests that metacognitive skills are certainly teachable(48). The more challenging aspect of this literature is how best to teach these skills. Metacognitive skills can be learned and applied more fluidly in supported active learning contexts rather than by direct instruction(54). This can be done through a range of activities and exercises which will be outlined in the next chapter.

The aims in teaching metacognition should also be considered when teaching these skills. For example Khun (2000) suggests that interventions delivered at the meta-level rather than the performance level, which means instruction should be aimed at increasing awareness and control of the task rather than task procedures. One way this can be achieved is by providing learners with a checklist whereby they can plan, monitor and evaluate their success which could help students to be more strategic in their approach to problem solving(58).

Finally, as with previous research in educational psychology, metacognition is best taught in environments which are collaborative or cooperative. Hennessey (1999) points out that such techniques promote metacognitive discourse among students and stimulate conceptual conflict. Such conflict can lead to clarifications of students' beliefs and concepts. Similarly, Kramarski and Mevarech (2003) attribute the superior performance of students working in collaborative group settings to the higher quality of discourse observed among students working together.



Clearly there are many variations which can be applied to the teaching of metacognition, while maintaining the basic principles of self monitoring, collaboration and evaluation. There are many interventions and programmes which teach metacognitive skills in slightly different ways, many of which work well. Examples of some of these programmes/interventions are outlined below.

### 2.6.5 Examples of programmes, modules & exercises

Given the clear efficacy of metacognition in allowing students to become independent learners, it is not surprising that numerous metacognitive skills programmes have been developed for use in schools and organisations in recent years. These programmes have been designed for use with a wide variety of young people of different ages, demographics and social backgrounds and have been demonstrated to be highly effective. Learning from their successes and most importantly their limitations is crucial in the development of future metacognitive modules.

The first example of a cognitive programme that will be explored is the well-established Cognitive Acceleration through Science Education (CASE) programme. Initially developed in the UK (59), this programme has continuously been shown to have positive effects in students thinking skills in the UK, Ireland and elsewhere in the world (60). Metacognitive skill forms an integral part of this programme, which aims to promote student thinking from concrete forms of learning, to more abstract thinking. While the programme is based in the learning of science, it has many transferable aspects and learning points that can be incorporated into metacognitive programmes.

Research has demonstrated CASE to be beneficial in the Irish context by improving thinking skills among participants (61). The authors of this programme noted that in writing course materials, metacognition could not be learnt solely by explicit teaching (61). Rather through exercises linked to classroom work, the CASE programme encourages students to reflect on their own thinking processes, comment on difficulties and discuss with other classmates how they may have succeeded or not succeeded on a task. In this way, they will develop the metacognitive skills possible to transfer to other contexts.

One example of this throughout the CASE programme is for the teacher to ask questions of the students during group-work and discussions. The teacher asks questions designed to reveal the thinking process; while the learner has to put into words the line of thinking - which makes the process more available both to others listening and the learner themselves. Questions can include:

- a. *What were you thinking about when you did that?*
- b. *How did you get that answer?*
- c. *You seemed to have a different way of doing it; can you explain how you decided you would do that?*

Other examples of teaching metacognitive skills through activities can be seen whereby students are asked to categorize groups of animals, chemicals, foodstuff etc. in different exercises over the course of a few weeks. The metacognitive element of this task comes weeks later as students are asked to reflect on all these activities and think about how they tackled these problems. In their worksheet (pictured below), students will become conscious of past strategies, making them more available for use in other contexts.



**Thinking Back**

*Put a tick by the classification activities you found easiest.  
Put a cross by the one you found most difficult.*

1. Living and non-living things   

2. Chemicals   

3. Store cupboard   

4. Big animals   

Why was the one you ticked the easiest?

---

Why was the one you marked with a cross the hardest?

---

Has everyone ticked and crossed the same thing as you?

---

Write a sentence about a friend, using the word **characteristic**.

---

Why do you think that it is useful to be able to classify things?

---

However, in a review of the roll out of the CASE programme, it has been suggested that while teachers had positive attitudes towards the methodology of CASE, many felt unable to engage their students in metacognitive discussion, as they did not feel knowledgeable in the area themselves (62). This was highlighted by a questionnaire administered to assess teacher's knowledge of metacognition. Therefore another key lesson from the CASE programme is that while metacognitive skills can be taught in an indirect manner, care must be taken to ensure that those rolling out the module are constantly aware of the aims of each exercise. In fact for a successful module, particular emphasis should be placed on developing teachers' understanding of metacognition and their ability to elicit metacognitive thinking from their students.

Other suitable methods of teaching metacognitive strategies advocate a more explicit form of teaching for students (63). Particularly when communicating with younger people who may not have come across the concept of metacognition before, it has been suggested that metacognitive skills may offer young people the tools to "drive their brains." (63) In this way, students are given a concrete metaphor that taps into their desire to guide or "drive" their own futures. Once participants have been introduced to this topic, the facilitator could discuss the potential benefits of a young person "driving" their brain well. Coyners and Wilson (2014) (63) give the following example: *"sometimes we might need to put on the brakes (e.g., by reviewing a reading passage to make sure that we understand it) or step on the gas (e.g., by jotting down and organizing notes for an essay instead of getting stuck on how to start it). We need to keep our brains moving in the correct lane and along best route toward achieving our goals."* Such metaphors can be a very useful tool for communicating what can be a difficult skill to learn, suggesting that explicit teaching of metacognition may in fact be a useful strategy. Though the above examples relate to academic concepts, these could be adapted to any number of different situations including situations at home with family, in the workplace or with friends.

Consistent with this theme of allowing participants thought processes to become more explicit, "visible thinking" (64) provides a large number of exercises aimed at creating better learning and more thoughtful students. The first of these exercises, titled "Compass Points" allows students to collaboratively discuss a given proposition. This routine explores different sides of a proposition or idea prior to taking a stand or expressing an opinion on it. With a compass drawn on the board/flipchart, a group instructor can suggest a topic for discussion, for example, if a

workplace introduces a rule against swearing. The group collectively should discuss the situation with reference to the terms of the compass (image below). Rather than North, South, East and West, the compass asks the participants to reflect on areas called Excited, Worrisome/Worried, Need to know, Stance/Suggestion moving forward.

1. **E = Excited**  
What excites you about this idea or proposition?  
What's the upside?
2. **W = Worrisome**  
What do you find worrisome about this idea or proposition? What's the downside?
3. **N = Need to Know**  
What else do you need to know or find out about this idea or proposition? What additional information would help you to evaluate things?
4. **S = Stance or Suggestion for Moving Forward**  
What is your current stance or opinion on the idea or proposition? How might you move forward in your evaluation of this idea or proposition?

This activity can be done with the entire group, which enables participants to build on each other's ideas. Facilitators can also ask to students to individually record their own initial or "gut judgment" to the proposition, then at the end ask them how their thinking has changed after discussion using the compass points routine.

Another very useful tool aimed at promoting visible thinking is titled "I Used to Think... But Now I think..." This is described as a routine for reflecting on how and why our thinking has changed.

Remind students of the topic you want them to consider. It could be an ideal such as fairness, truth, understanding, anger or creativity--or it could be the unit you are studying. Have students write a response using each of the sentence stems:

- I used to think...
- But now, I think...

This routine is useful as it enables participants to reflect on their thinking about a topic or issue and explore how and why that thinking has changed. Having participants share and explain their shifts in thinking allows them to become conscious of it but also allows other participants to benefit from the reasoning behind this shift.

There is a vast range of metacognitive programmes in existence, with varying degrees of efficacy for those who take part. Routines such as those discussed above and many others all have the potential to foster metacognitive skill development within a programme. While there is no single best way to teach participants metacognitive skills, we can take some key points of learning from the success of the above modules. Firstly, metacognition can be taught by either explicit teaching or incorporation into activities, although a combination of both seems to be most effective. The use of metaphors and simplifications of the rather large concept of metacognition can promote participant engagement in the topic. Furthermore and perhaps most importantly, those who deliver the programme should be clear in their understanding of these concepts in order to ensure the success of the module.

## 2.7 The Role of Youth Work Organisations in Supporting Skills Development

The role of youth work organisations in supporting the progress of young people towards education and employment is enshrined in law. Section 3 of the Youth Work Act 2001 defines Youth Work as:

*A planned programme of education designed for the purpose of aiding and enhancing the personal and social development of young persons through their voluntary participation, and which is complementary to their formal, academic or vocational education and training; and provided primarily by voluntary youth work services.*

The Department of Children and Youth Affairs have (through an extensive literature review) identified a number of 'potent mechanisms', which, they have concluded will yield improvement across a range of needs including education and employment. The Department of Children and Youth Affairs indicate that these are the outcomes that Youth Work services are ideally supporting for those young people using their services.

### 7 potent mechanisms delivering improvements for targeted youth programmes

**Communication skills** are essential for a successful transition to work or training, for independence, and to access a range of life opportunities, to attainment, in forming positive relationships and in reductions in re-offending.

**Confidence and agency** enables young people to recognise that they can make a difference to their own lives and that effort has a purpose, is important to key outcomes such as career success. There is evidence of a link between positive outcomes and self-confidence.

**Planning and problem-solving**, alongside resilience, provides young people with a 'positive protective armour' against negative outcomes associated with risky life events. Problem-solving has also been shown to be associated with the ability to cope with stresses in life.

**Relationships** are an effective mechanism for getting young people involved in positive activities through valued personal relationships with peers, adults or siblings. A beneficial change in young people's relationships with other adults through their participation in positive activities can be transferred to academic learning and may lead to better outcomes.

**Creativity and imagination** is related to resilience and well-being. Creativity can have a positive impact on both self-esteem and overall achievement.

**Resilience and determination** – If society intervenes early enough, it can improve cognitive and socio-emotional abilities and the health of disadvantaged children. Effective early interventions can promote schooling, reduce crime, foster workforce productivity and reduce teenage pregnancy. **Self-discipline** has been highlighted as a vital factor in building academic achievement, significantly better than IQ.

**Emotional intelligence** is associated with the ability to manage feelings by knowing one's own emotions, as well as recognising and understanding other people's emotions. This is vital in managing relationships (e.g. managing the emotions of others).

The outcomes and purpose of Youth Work in Ireland were previously explored in research by Devlin & Gunning who described in detail the broad and complex nature of Youth Work, highlighting in particular the fact that it is a voluntary, non-formal education process with a

purpose to build social capital. The authors highlighted a number of important features of Youth Work which reinforce the crucial role of programmes such as SORT It being delivered in a youth work context, namely that Youth Work can promote pro-social behaviour and support young people with the practical skills to navigate education and employment environments.

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