# Developing cognitive complexity and value pluralism within prevention curricula:

## An empirical assessment of the *Living Well with Difference* course for secondary schools in England

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- Study uses a social, cognitive approach to transforming low complexity thinking which can sustain social polarisations, prejudice and extreme thinking.
- Course delivered in secondary schools shows increased cognitive complexity, reduction in polarised conceptions of out-groups associated with an increase in pro-social behaviour.
- Addresses some of the challenges faced by contemporary PVE-E within Europe and the UK, using an emergent model of change to promote more nuanced, critical thinking about social issues.
- Provides a humanitarian model to support safeguarding duties and to reduce social polarisation, prejudice and extreme thinking in schools.

**Purpose:** To promote gains in cognitive complexity (measured by integrative complexity, IC) associated with recognition of validity in others' viewpoints/values, supporting peaceful conflict reduction.

**Design:** Assessment of effectiveness of *Living Well with Difference* (LWWD) course designed to promote critical thinking about contested social issues. LWWD was delivered to 199 secondary school students in England, comprising eight hours of sessions in curriculum time.

**Findings:** Results using Paragraph Completion Tests showed that IC increased in the intervention condition in comparison to the smaller control condition IC gains. Resilience scores did not show significant gain, although it correlated moderately with IC gain.

**Research Limitations:** Unequal numbers of control: intervention groups, non-random school sample, and a moderate amount of missing data are potential limitations.

**Practical Implications:** The discussion explores the possible contribution that LWWD can make to citizenship education and 'deep' critical thinking that engages with emotions and values, complementing prevention curricula in the light of EU recommendations.

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# 1 INTRODUCTION[1]

Europe's current social and political environment is marked by growing polarisation. Far right extremism has increased by 36% (Home Office, 2018), in opposition to immigration influxes, perceived cultural and demographic shifts, and attacks by Islamic State (ISIL) (Davis & Deole, 2017). Radical left electoral gains in Greece, Spain and Portugal exert opposition to far right groups and to globalised capitalism (March & Mudde, 2005). These trends are compounded by inflammatory socio-political dialogue influencing a sense of threat felt by different cultural groups. Young people are faced with increased economic, environmental and career uncertainties as well as the lure of extreme ideologies that seek to present a 'quick fix' to the complexities of the modern world.

  Efforts to prevent violent extremism in education (PVE-E) in the UK and Europe have suffered from 'vague notions about what to focus on... uncertainty as to how to successfully confront these issues' and a lack of empirical evidence (Kundani, 2012, p.23). Moreover, a prevailing focus on security (Sedgwick, 2010) may overlook the way these polarised positions are interdependent and can express genuine grievances concerning inequality, marginalisation, corruption, human rights abuses and environmental concerns. Acknowledging that these problems need addressing on their own terms at state level, they often combine with individuals' search for identity, belonging and purpose, 'whose pursuit can render young people open to extreme thinking that provides answers, certainty, and a pathway to action' (Nemr & Savage, 2019, p.1). Like-minded individuals can easily connect online or in groups, and the shared mindsets created through these interactions can sustain ingroup versus outgroup hostilities, which in the most extreme cases can inspire violence, as in the case of the far-right attack on worshippers in a mosque in New Zealand (Wood, 2019). Prevention programs in schools and communities have faced difficulties grasping the indeterminate, changing and multivariate nature of involvement in extreme thinking of any kind, and often have not managed to avoid stigmatising certain groups. It is argued that such programs tend to exhort individuals to change themselves while ignoring the wider polarised social landscape (Dudenhoefer, 2016).

  Critical thinking in schools has been identified as necessary within multi-pronged approaches to address any form of prejudice, polarisation or extreme thinking (UN, 2018). One difficulty is that thinking about contested social issues often involves emotional commitment on the part of the individual and their social group. A skills-based approach to critical thinking, one that focuses mainly on logical reasoning and analysis of arguments for assertions unsupported by evidence (Lewandowsky, Ecker, Seifert, Schwarz, & Cook, 2012), may be insufficient to address this dynamic (Davies, 2016). What is required here is to develop a programme that promotes a 'deep criticality' (Moon, 2008) that engages with emotion as a trigger to thinking and a source of energy that can prompt shifts in ways of seeing the world and thus behaving in it (Brockbank & McGill, 1998).

## 1.1 Commissioning of course

In response to these challenges, the British Red Cross commissioned the co-development of a course with psychologists at the University of Cambridge to promote critical thinking about contested social issues. The course, entitled Living Well with Difference (LWWD), is based on a social, cognitive psychology approach, explained below. LWWD is intended for delivery within the national curriculum in secondary schools in England, for ages 14-19, with the aim of promoting students' exploration of a wide range of human values, ability to perceive some validity in differing perspectives, assess extreme messaging through media literacy, and to practice cooperative life skills (Savage, Oliver, Ward, Gordon & Tutton, 2020).

  LWWD works through physically enacted activities, involving emotions, senses and social interactions. Students enact social scenarios relevant to their lives through randomly assigned

role play, supported by facilitator prompts to 'see your thinking'. In so doing, the socially shared mindsets, group norms and social polarisations become 'visible' to participants. The aim is for social polarisation and extreme thinking to lose their allure, and to enable young people to become active citizens in a complex world.

The British Red Cross has a long-established policy of institutional neutrality, and while it is acknowledged that any knowing involves a vantage point, it is the purpose of LWWD to provide a non-biased and non-judgemental space for young people to develop their own critical thinking and worldviews in the face of rising social polarisation.

This paper reports on the effectiveness assessment of the LWWD course delivered in secondary schools in England during 2017, and discusses the results in the light of European policy recommendations. Through the following sections we discuss the LWWD theory of change.

## 2 INTEGRATIVE COMPLEXITY

To design LWWD and measure its effectiveness, we draw on the predictive body of integrative complexity (IC) research, which shows that increases in IC correspond with prosocial conflict resolution between groups and individuals. Over the past forty years, research by Peter Suedfeld and colleagues show that when the verbalisations of parties facing inter-group conflict decreases in complexity (IC), conflict and even violence is likely to increase in subsequent real world events (Suedfeld, 2010). Conversely, when mediators enable more complex thinking for both parties involved in conflict, allowing them to be undergirded by multiple values-in-tension, the results are associated with peaceful conflict resolution (Tetlock, Armor & Peterson, 1994; Tadmor, Tetlock & Peng, 2009).

Integrative complexity (IC) is a measure of how people process information, from simple to complex; it is not about the content of thinking but rather the structure of thinking. A low IC score of 1 (out of a scale from 1-7) represents categorical, unidimensional thinking from one evaluative viewpoint. Higher IC acknowledges multiple values, causes, dimensions and conditions, which can be synthesised with an ability to hold differing views in tension for negotiated agreements and peaceful outcomes (Conway, Suedfeld & Tetlock, 2018).

Humans display both high and low complexity depending on the context, and can sometimes display both with regards to a particular issue (Suedfeld, Leighton & Conway, 2005). However, those with sustained low complexity thinking regarding inter-group issues can find consonance with the low complexity structure of extreme ideologies, which in turn can further ingrain extreme thinking and reduce the ability to resolve conflict. The theory of change here is emergent. Structural factors and vulnerability factors are not in themselves reversed. Rather, as participants' cognitive complexity increases, more nuanced, contextual, and emotionally flexible ways of thinking emerge, which in turn fosters engagement with society in more pro-social ways.

## 2.1 Extreme thinking and cognitive complexity

A number of theories discuss the links between complexity of cognition and extreme thinking. Context theory suggests that extremists, in comparison to moderates, can exhibit a relatively high field dependence, higher intelligence, and draw on larger informational arsenals and a greater knowledge of their subjects of focus (Sidanus, 1984, p.812). In contrast to context theory, findings from IC research carried out on a range of extremist ideologies (far right, nationalist, territorial, Islamist, etc.) reveal low complex, binary categories and monocausal arguments viewed from a single evaluative pole (Conway, Gornick, Houck, Towgood & Conway, 2011). To make sense of these differing accounts, it helps to distinguish between two empirically derived aspects of IC: elaborative complexity and dialectical complexity (Conway, Thoemmes,

Allison, Towgood, Wagner, Davey & Conway, 2008). Their research shows that extremists do have a more elaborate, detailed arsenal of knowledge and reasoned arguments to draw from. However, this information is mainly evaluated from a single point of view, or in terms of a single important value eschewing any trade-offs (Ginges, Atran, et al., 2011, Berns et al., 2012), or by ignoring evidence that contradicts their claims. In other words, elaborative complexity may be high, whereas dialectical complexity is low. Dialectical complexity involves the ability to hold both 'good' and 'bad' emotions or valences in tension, to see some validity in differing viewpoints, and to accept that people and groups can have both good and bad aspects. It is this capacity that is the core aim of LWWD.

## 2.2 Identity threat and low complexity thinking

Complexity of thinking can be reduced by sudden or long-term stressors (Suedfeld, 2010). In the Introduction we touched on how young people facing economic, environmental and career uncertainties can be attracted to social polarisations or ideologies that present a 'quick fix' to the stressors of the modern world. According to May (1991), collective in-group ideologies can restore a sense of identity, endorse a defined set of moral values, encourage in-group loyalty, and provide meaning in the face of uncertainty.

   Perhaps the most pervasive individual vulnerability to the allure of extreme ideologies in western contexts is a pervasive sense of threat to important cultural values arising from globalization's intermingling of cultures, each with their different value priorities. Ingelhart and Welzel (2005) and Schwartz & Boehnke (2004) observed that a sense of threat to cultural values can provoke a shift towards the 'conserving' pole of values, including conserving social conformity, tradition, power and security, while eschewing other values such as self-direction, achievement, hedonism, stimulation, universalism. A focus on either valence pole alone (here termed value monism) tends to promote low complexity thinking (Tetlock, 1986), seen as "individuals seek to reconstruct a lost identity in a perceived hostile and confusing world" through the creation of clear-cut in-groups (those that adhere to a prescribed worldview) and out-groups (those that contradict, contend, or exist outside of the prescribed worldview) (Dalgaard-Nielson, 2008, p.800; Crenshaw, 1981).

   This threat to identity features heavily in both far right manifestos and the propaganda messaging of the Islamic State group. For example, the transnational Far Right have utilised notions of 'the great replacement', a grand eonic narrative of western identity decline in the face of advancing foreign cultural forces (Polakow-Suransky & Wildman, 2019), while ISIS have sought to exploit feelings of oppression and marginalisation within Europe's Muslim communities. These trends illustrate the need for education approaches to PVE-E to develop resilience, defined as an individual's ability to cope or recover quickly from stressors (Diehl, Hay & Chui, 2012).

      Over 99% of 15-29 years olds in the UK use the internet, and it is no surprise that this age group is increasingly exposed to low complexity extreme messages (Office for National Statistics, 2018). Online internet radicalisers seek to persuade with their simple narrative: 'join us and claim your place in history' (Home Office, 2016). These websites tend to create a one-sided view of the issues, and this can constrict thinking around a single evaluative viewpoint, thus reducing complexity of thinking about social issues. This connects with a normal tendency for people tend to valorize their in-group, while retaining limited, often negative information about out-groups. What begins as an understandable defensive reaction to social uncertainty can lead to people becoming stuck in low complex, 'black and white' thinking that offers little escape from polarised positions.

   In short, group identities form a lens through which social reality is perceived and interpreted (Innaccone & Berman, 2006). The 'all good' in-group presents its ideology as absolute truth and pits itself against the 'all bad' out-group and their 'false' ideology (Orsini, 2012). The method in LWWD uses a variety of strategies to resource more nuanced, complex thinking about in-groups

and out-groups underpinned by values-in-tension (Savage, S., Oliver, E., Ward, A., Gordon, E. & Tutton, L., forthcoming; Liht & Savage, 2013; Tetlock, 1986).

## 2.3 LWWD course design

LWWD takes inspiration from the philosopher Isaiah Berlin who argues that all human values are equally important. However, the different value priorities across cultures and individuals can stoke conflict unless people are able to perceive some validity in the differing value priorities of others (Berlin, 1990). Extreme positions tend to emphasise one moral value pole to the exclusion of others (Tetlock, 1986), as argued above, particularly in regard to values that define group identity (Strozier, Terman & Jones, 2010), thus preventing compromises or trade-offs.

We use the research of Schwartz and Boehnke (2004) identifying ten cross-culturally valid general value types: universalism, benevolence, tradition, conformity, security, power, achievement, hedonism (enjoyment of life), stimulation, and self-direction. Utilising the way human values tend to be in a dynamic tension, participants are encouraged to explore a range of values-in-tension through a process that enables them to perceive some validity in each value pole and any position in between, so that more complex thinking based on a broad array of what is important to each participant can emerge (Tetlock, 1986).

LWWD comprises four sessions each lasting two hours in curriculum time, making a total of eight hours of sessions. These are complemented with homework resources, an additional student-led session, and a wrap up session to reinforce learning. The sessions are delivered by teachers or educators to students, and cover the social themes and value tensions below:

Session 1: Safety and security versus innovation and change (regarding responses to immigration and the intermingling of different cultural and ethnic groups, culminating in a higher level framework to enable living well with difference).

Session 2: Maintaining power for one's own group vs universal justice for all (regarding maintaining the status quo through in-group and out-group division, exploring how to balance dynamic tensions).

Session 3: Focus on conflict and destruction versus future peacebuilding (regarding inter-group conflicts involving unfair resource allocation, finalised by exploring negotiation strategies).

Session 4: Desire for 'easy' utopia versus self-direction (learning to identify extreme rhetoric in media examples in order to be able to make one's own decisions, and apply this learning in the future).

Each of the four LWWD two hour sessions comprises a four-stage pattern. Stage A opens up 'embodied, sensory, emotional cognition' through multi-media and role play, fostering curiosity and openness. Stage B polarises randomly assigned groups, using words, arguments, debates, speeches. In-group bias is routinely, playfully elicited, and thinking tends to take binary extreme positions with a resultant drop in complexity of thinking. This is a key point for course facilitators to prompt participants to 'see their thinking', as students come to realise that bias, prejudice and polarisation are not the product of any one group, but rather of normal social and cognitive processes, that have been hitherto unseen. In stage C, the binaries are decompressed by providing learning activities to encourage a broader view (called differentiation), by introducing multiple viewpoints, values, causes, conditions. In D, participants construct for themselves more complex value-based integrative frameworks which are practiced in life skills that can be transferred to everyday life. They practise integration through role play, negotiation, and weaving

together clashing perspectives to achieve a higher level of organisation of social reality – and correspondingly of the brain – an adaptive change that helps their life chances (Morales, 2015) and their educational outcomes (Kercood et al., 2017).

In short, learning in LWWD occurs through embodied, sensory, interpersonal activities as well as rational argument, which are structured to help learners take in a wide array of information to support a shift to a more complex and contextual understanding that goes beyond categorical 'black and white' thinking (Bernstein, Yuval, Lichtash, Tanay, Shephard & Fresco, 2015).

## 2.4 Process of course development

As presented above, the focus on structure of thinking helps to avoid singling out any person, group or belief system. This focus accords well with the Red Cross Movement's Fundamental Principles of impartiality, neutrality and humanity. Through piloting of the sessions we kept a running check on whether the course design would maintain a neutral space for our participants. Ethical review at the University of Cambridge covered concerns for confidentiality (and anonymity in reporting findings) and avoiding any harm to participants or their communities. We gained parental consent for under 18s as the LWWD target audience is 14-19 year olds, and transparently explained the purpose of the IC course and its research assessment to promote informed consent.

## 2.5 Expectations for LWWD

Over the past ten years, over 80 IC Thinking® courses, of which LWWD is one type, have been empirically assessed in England, Scotland, Kenya, Finland, Bosnia-Herzegovina, Kosovo, Macedonia, Pakistan, with courses in Sweden and Nigeria underway. Each assessed course has shown large size effects and significant pre-post test gains in IC and other measures such as value complexity (Schwartz & Boehnke, 2004), resilience (Connor & Davidson, 2003), perspective taking (Davis, 1983) and social identity complexity (Rocca & Brewer, 2002). Through these courses, young people from various backgrounds come to see the world more complexly, with greater ability to 'see through' extreme thinking of any kind, coupled with the ability to perceive some validity in others' perspectives. Gains in IC have been achieved with participants at the sharp end of prevention (with detained and former militants, Peracha, Khan & Savage, 2016; Savage, Liht & Khan, 2014), identified at risk young people (Savage & Fearon, Forthcoming), and through broad-based prevention courses operating in communities and secondary schools in Scotland (Boyd-MacMillan, Fearon, Ptolemey, Mathieson, 2016, Boyd-MacMillan, 2016), Finland (Portman, 2018), England (Liht & Savage, 2013) and Sweden (DeMarinis, Nordendahl, Arnetz, Arnetz, Sandlund, Naslund, & Boyd-MacMillan, 2018) with consistently significant results. These results inform our expectations of LWWD.

In view of our argument so far, and the track record of IC Thinking courses to date (Nemr & Savage, 2019), we assess LWWD course effectiveness by measuring changes in the structure of thinking, from simple to complex, of participants' verbalisations about their self-identified in-group and out-group. Pre-test evaluations are conducted prior to session one and post-test evaluations are conducted once session four had been concluded.

## 2.6 Hypotheses

We pose a primary hypothesis expecting gains in IC, and a secondary hypothesis to explore whether a validated resilience scale could serve as a proxy for IC measurement in future school roll outs. The two hypotheses are:

Hypothesis 1: Following LWWD, the intervention group will demonstrate higher IC scores in written paragraphs regarding participants' self-identified in-group/s and out-group/s, in comparison to the control group IC gains. (Some control gains are expected due to the effect of time and re-test practice.)

Hypothesis 2: Following LWWD, participants will demonstrate higher resilience scores.

## 3 METHOD

### 3.1 Participants and procedure

A total of 199 secondary students participated in the LWWD study in ten schools across England. Participant ages ranged from 13 to 15 (M = 14.01, SD = 0.85), with 49% identifying as male and 51% as female. Ethnic background data was not solicited for sensitivity reasons. However, secondary schools were selected to provide an ethnically representative sample of England and aimed at having a mixture of ethnic groups and rural and urban settings in most courses. Course group size ranged approximately from 20 – 25 participants. Specific school names have been withheld to protect participant privacy. The study ran between January and December 2017, with data gathering occurring in two phases, for operational reasons.

Three training pathways for 22 trainee course facilitators were tested:
LWWD course run by:
- British Red Cross educators who attended a one day workshop
- Teachers who attended a one day workshop
- Teachers who attended a two hour webinar

Teachers were recruited to the project via marketing emails to schools. LWWD was presented to secondary schools in England as a course that fits well with the educational aims of the Citizenship programmes of study and the wider Social, Moral, Spiritual and Cultural (SMSC) development of pupils, as well as Personal, Social and Health Education (PSHE). Skills that underpin these subjects include critical thinking, social and emotional intelligence, and civic participation, all of which are leveraged by taking part in LWWD. Following interest from teachers, schools were selected from communities representing a wide range of religions, backgrounds and ethnicities. Teachers in the participating schools selected the classes that would participate in the courses. Each school managed parental consent forms provided by the research team.

All facilitators were given preparatory material including prior reading about the IC method, and a short film of an experienced IC facilitator delivering a LWWD activity. Trainee facilitators then opted for the one-day workshop or the two-hour webinar according to their availability. IC Thinking courses usually provide facilitators with a 16-hour IC course in advance, followed by two days of face-to-face training workshops along with a range of additional reading. However, in the case of LWWD, operational constraints resulted in pre-delivery training being restricted to either a one-day face-to-face workshop or a two-hour online webinar. Both routes furnished participants with the same advanced information online. The purpose of trialling these training routes, and comparing teachers as opposed to British Red Cross educator results, is to inform how best to select and train course facilitators in the future. Please see Educator Training Flow Chart in Appendix 1 to see numbers trained by each method.

Teachers and British Red Cross educators delivered the LWWD program and the pre and post testing sessions in the selected schools during curriculum time. Four two-hour LWWD sessions

were delivered over a number of weeks, interspersed by a student-led session, student home-work and wrap-up session at the end. Participants completed pre-test measures before beginning the course and post-test measures after the final session.

## 3.2 Instruments and measures

### 3.2.1 Paragraph Completion Test for Integrative Complexity analysis

Integrative complexity, a measure of cognitive complexity, was measured by two coders, separately coding written data elicited using a Paragraph Completion Test (PCT), a gold standard instrument for eliciting verbal data for IC analysis. The standard IC coding framework (Baker-Brown, Ballard, Bluck, De Vries, Suedfeld & Tetlock, 1992), a linguistic analysis framework that focuses on the structure of argumentation, predictive cross-culturally of real world outcomes to conflict, was used to analyse participants' written responses to the open-ended PCT prompts.

Because IC analysis concerns a person's structure of argument rather than content (such as beliefs), proponents argue that it is almost impossible to fake as cognitive change occurs subconsciously, and therefore cannot be manufactured, especially under test conditions. A small amount of impression management is possible, but easily identified by experienced IC coders and excluded from results. Interestingly, another method of coding argumentation provided by Gronostay (2016) tracks interactions between speakers, and arrives at similar constructs to IC coding such as binary, low complex thinking with further stages moving towards dialectically complex thinking able to see some validity in differing viewpoints.

The PCT asked participants to firstly to write down the community (group) that they strongly identify with (their self-designated ingroup/s), and the community (group) that is most different to their group (their self-designated out-group). A large range of examples were provided, such as white, British, male, Catholic, South Asian, sports fan, European, West Caribbean, student, Muslim, female, Welsh, British Pakistani and so forth. Participants were encouraged to write as much as possible (up to one page) in response to open-ended prompts about their in-group and out-group. The PCT items for both pre-test and post-test are identical. This resulted in four coded paragraphs per participant (except where participants left a question blank). All paragraphs (672 in total) were coded. (Please see Appendix 2 for PCT instrument).

Two trained coders, senior researchers from the Department of Psychology, University of Cambridge, completed the IC coding analysis. The first coder coded 100% of the paragraphs provided by participants, and the second coder (not otherwise connected with this study) coded a random sample containing 20% of participants' paragraphs across a range of IC scores in line with accepted IC coding practice (Suedfeld, Corteen & McCormick, 1986). After independently coding the paragraphs, both researchers compared their results. Differences of one IC score were averaged, and differences of more than one IC score were moderated by discussion in order to achieve high intercoder reliability.

### 3.2.2 Resilience Scale

As a secondary measure, we utilised the Connor-Davidson Resilience Scale (CD-RISC), using the short form 10-item scale (Connor & Davidson, 2003), which assesses participants' ability to respond to a range of challenges with resilience. Participants were asked to respond to each statement based on their life experiences over the preceding month to help capture the impact of LWWD.

A Likert scale for each item was rated from 0 ("Not true at all") to 4 ("True nearly all of the time") to capture a range of indicators known to predict better coping (Connor & Davidson, 2003).

**4 RESULTS AND DISCUSSION**

**4.1 Control and Intervention comparisons of IC Scores Pre and Post sessions**

Data gathering occurred at two points in time (phase one and phase two; phase two occurred simply to increase the sample size and to allow for a control/ intervention research design). Both phases showed significant IC gains.

In phase one, integrative complexity (IC) from two courses showed significant gain in the post-test, in line with hypotheses, according to a matched-pairs t-test (t = 7.281). This IC gain is statistically highly significant (p = <.001) and effect size is large/very large (Cohen's d = 0.789).

Phase one (the first four intervention school courses) showed a gain in IC from a pre-test IC mean score of 1.43, to a post-test IC mean score of 1.95. Phase two allowed a Control/ Intervention design. Both expectations of this research design were met (please see bar chart below):

- One, that the Control condition (two school groups that did not take part in the LWWD course) will show some gain in the post-test due to prior practice in the pre-test and natural development during the same interval as the Intervention.
- Two, IC gain in the Intervention (six school groups taking part in the LWWD course) will be significantly larger than in Control.

**Bar Chart 1: Intervention: Control IC scores pre and post**
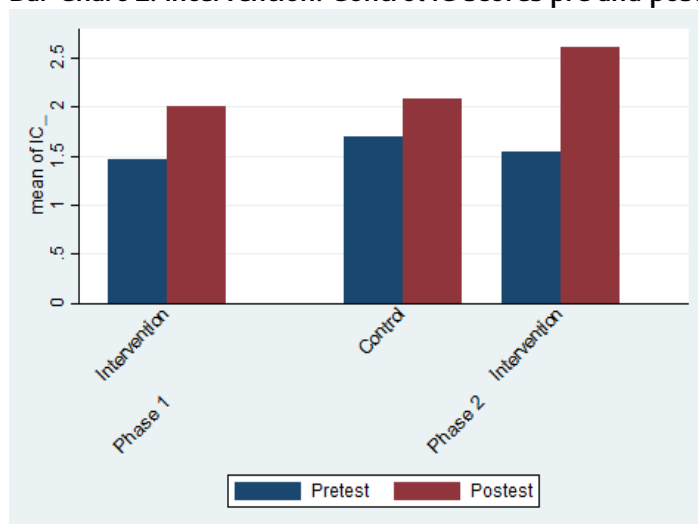


According to a Difference-in-Differences test, the Intervention condition shows statistically significantly higher IC than the Control condition. This can be seen in the tables below.

**Table 1: Difference-in-Differences IC means and statistic**

| IC mean | Std error | t | p (probability) |
|---------|-----------|------|-----------------|
| 0.438 | 0.212 | 2.37 | <.05* |

Control pre-test n= 37, post-test = 32.    Intervention pre-test n =135, post-test =119 post.

**Table 2: Phase Two Pre and post-test IC score means**

| Pre-test IC mean Control | Pre-test IC mean Intervention | Post-test IC mean Control | Post-test IC mean Intervention |
|---|---|---|---|
| 1.689 | 1.51 | 2.08 | 2.34 |

## 4.2 IC gain for In-group and Out-group

According to matched pairs t-tests measuring, gains in IC for the In-group and the Out-group are both significant gains. Gains in IC towards the Out-group are larger than the In-group, a good result as IC gains regarding the Out-group are predictive of reduction of intergroup conflict and violence. Effect size for Out-group and In-group is very large.

**Table 3:   Pre and post-test In-Group and Out-Group IC Gains**

| Mean IC Scores | Pre | Post |
|---|---|---|
| In-group | 1.53 | 2.21 |
| Out-group | 1.25 | 2.25 |

**Table 4: Statistics for In-group and Out-group IC Scores Pre and Post**

| Statistics of Comparison of pre and post | In-group | out-group |
|---|---|---|
| t | -7.7525 | -7.056 |
| p | <.001* | <.001* |
| Cohen's d | 1.16 | 1.56 |
| df | 112 | 112 |

## 4.2.1 Discussion of In-group and Out-group IC gain

Participants demonstrated more complex thinking about both their in-groups and out-groups. IC gains when thinking about the in-group indicate a broader, more realistic appraisal, without diminishing the positive aspects of the in-group. Increased complexity about the out-group (that is, the ability to see both good and bad or multiple valid perspectives) suggests that the (usually dispreferred) out-group can be seen with more complexity and nuance, without the need to derogate them.

   As we have argued above, the ways in which extreme thinking is constructed involves a binary evaluation of in-groups and out-groups which often fosters the view that the in-group ideology is undisputed truth (Orsini, 2012). Particularly in times of social conflict, this binary in-group out-group structure supports extreme thinking (Hogg, 2005). The results here suggest that LWWD effectively de-constructed these dichotomous structures, and feedback from LWWD participants given below, provides insight into how LWWD succeeded in assuaging this mindset.

## 4.3 IC GAIN AND SCHOOLS

All Intervention schools show significant gain in overall IC (created by averaging IC scores from both in-group and out-group), with large/very large effect size, except PL (which is moderately-large).

   Unfortunately, only two schools volunteered to provide control groups (PL control and WC control), and the non-random manner of this sample, though usual for schools research, does limit confidence in the results. These two control groups had higher than average IC scores at pre-test (particularly WC control, which also showed significant IC post test gains in a separate t-test).

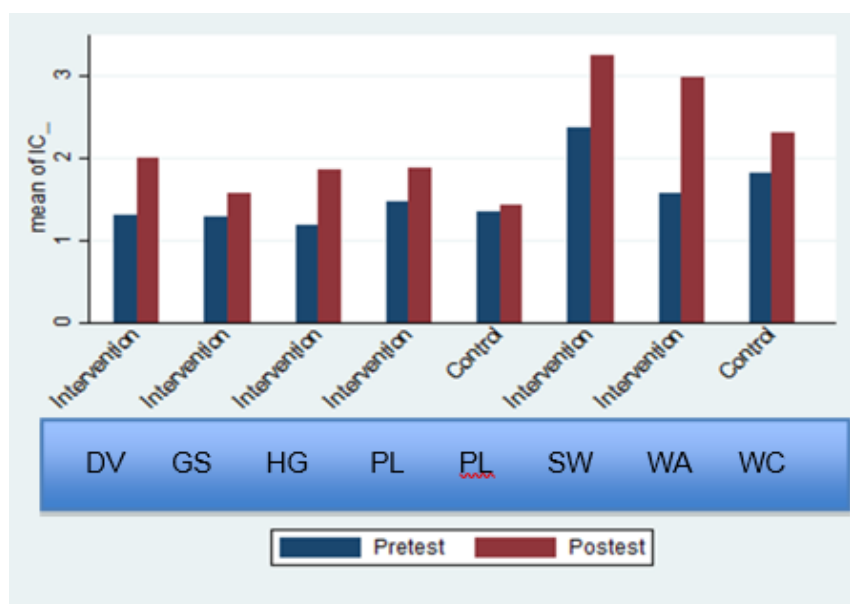**Bar Chart 2: Intervention and control school's IC scores pre and post**



**Table 5: Intervention Schools IC gain and paired t-test statistics**

|                    | IC Mean Gain | Std Dev | t      | P       | df | Cohen's d |
|--------------------|--------------|---------|--------|---------|----|-----------|
| **Intervention school** |         |         |        |         |    |           |
| DV                 | .687         | .530    | -3.66  | <.001*  | 7  | 1.3       |
| GS                 | .387         | .415    | -4.201 | <.001*  | 20 | 1.07      |
| HG                 | .65          | .579    | -3.545 | <.001*  | 9  | 1.52      |
| PL                 | .435         | .699    | -2.979 | <.001*  | 22 | 0.75      |
| SW                 | .95          | .685    | -4.384 | <.001*  | 9  | 1.58      |
| WA                 | 1.46         | .964    | -1.761 | <.001*  | 40 | 1.30      |
| **Control school** |              |         |        |         |    |           |
| PL control         | .062         | .320    | 0.701  | 0.59    | 7  | 0.625     |
| WC control         | .513         | .888    | -2.45  | 0.025*  | 17 | 0.51      |

### 4.3.1 Discussion of IC gain across schools

All Intervention schools show significant IC gain, whether the school intake was ethnically diverse or largely mono-ethnic, although magnitude of IC gain across schools does vary. Teacher comments indicate that differences in preparation time by facilitators may be an influencing factor in the different magnitudes of IC gain across schools. The educator who delivered courses in schools SW and DV spent six hours preparing for each session (twenty-four hours total). School HG was facilitated by a British Red Cross educator with another Red Cross educator as the support. They spent twelve hours preparing in total. The teachers who facilitated the course in school GS (with its more modest IC gain) did not report preparation time. One teacher who facilitated course WA (with the greatest magnitude of IC gain) mentioned significant time spent preparing each session, but was confident this would decrease with each repetition of the course. Prior skill levels of facilitators can also have an impact on the results of a course. Another factor may be the prevailing pedagogy used in the school; whether or not critical thinking approaches are routinely employed across various subjects.

As mentioned above, one control group (WC) showed significant gain. The non-random sampling effect here may be working against our expected results, as low pre-test scores are more 'stubborn' to leverage than higher pre-test scores which already show some openness. It may be that WC control is already implementing some aspects of critical thinking, or there may be some other school effect. The salient point to consider is that intervention group gains overall were significantly higher than the control group gains, in accordance with the research design, despite the control groups' relatively high pre-test IC scores.

### 4.4 Age and IC gain

There is an effect of age on increase in IC as a result of participation in LWWD. Correlation of age by IC is moderately strong (r = .418) and is highly significant (p <.001).

**Bar Chart 3: Age and IC gain**
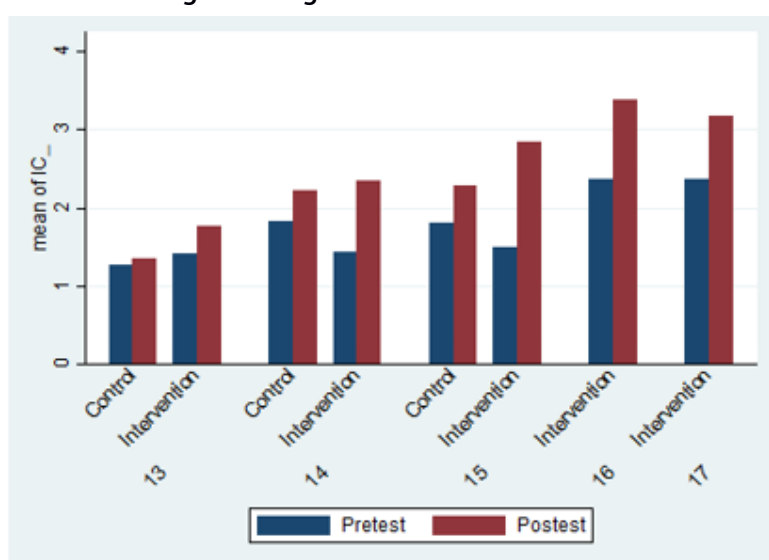


### 4.4.1 Discussion of Age and IC gain
LWWD was designed for 14-19 year olds, however because of the way year groups can fall in schools, some younger participants aged 13 took part. Participants who were aged 13 did not reach the usual post test score of IC score 2 that can be found in other IC Thinking courses. Those aged 14 and 15 do achieve differentiation scores (IC scores 2 and above). We suggest that this is in part related to participants' life experience of the topics LWWD explores and that youth aged 13 are less able to relate to the course content. Participants aged 16 and 17 achieved integration scores (4 and 5), at a higher level than other IC Thinking courses in the written condition. More specifically, the older students' higher IC scores are consonant with neuroscience research showing that higher, more abstract levels of moral reasoning capacity are not fully developed before the age of 16/17 (Kohlberg, 1971). It is possible that an addition of staged scaffolding to the course facilitation could help younger teens engage with epistemological awareness requiring a 'beyond society' perspective. We think this approach to critical thinking is crucial for all teenagers whose neural pathways are a work in process, making them ideally placed to respond with neuroplasticity to experiences that increase their cognitive complexity (Armstrong, 2016).

## 4.5 Gender and IC gain

In response to the question, 'Which gender do you identify as?' (with response options as female, male or neither), 42 identified as female (51%) and 39 identified as male (49%). One chose 'neither' and six respondents left the item blank. Females' IC mean in the pre-test starts higher than males', and shows greater IC gain in the post-test, across both Control and Intervention. According to a Difference-in-Differences sub-test, there is no significant difference in terms of IC gain. Females' effect size is very large, and males' is large.

**Bar Chart 4: Gender by IC gain**
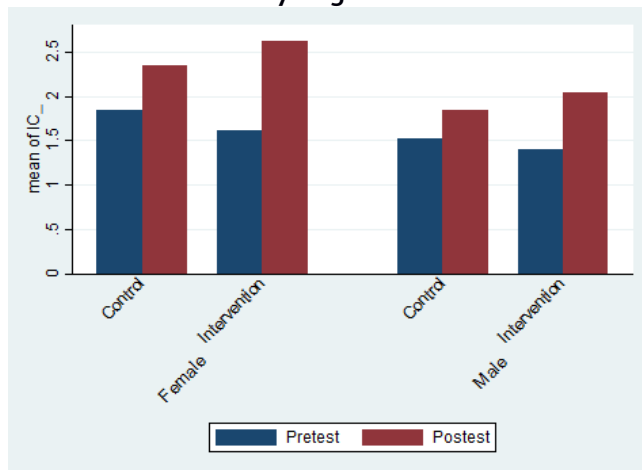


**Table 6: Gender by IC gain and paired t-test statistics**

| Gender | Pre IC | Post IC | Cohen's d |
|--------|--------|---------|-----------|
| Female | 1.668 | 2.577 | 1.366 |
| Male | 1.429 | 1.993 | 0.956 |

## 4.6 Summary of Cognitive Complexity

Taken together, the IC results indicate that the course achieved its core goals: increasing cognitive complexity in order to build social cohesion and reduce the risk of extreme thinking and social disharmony, both in overall IC gain and with In-group and Out-group gains. In view of the predictive validity of IC scores, we infer from these gains that LWWD participants will tend toward more pro-social, non-violent means to resolve inter-group conflict or social polarisation (Suedfeld et al, 2013). To re-cap, increases in IC signal a shift away from black and white, dichotomous, to a more nuanced thinking style that is more open to perceiving some validity in other groups' values and worldview

## 4.7 Resilience

### 4.7.1 Difference-in-Differences Resilience means and statistics
According to a Difference-in-Differences test, there is no significant difference in Resilience scores between the Intervention and Control condition. Although the Intervention condition shows a modest gain in Resilience scores, the Control condition shows greater gain.

**Table 7: Resilience statistics**

| Resilience mean | Std. error | t | p (probability) |
|---|---|---|---|
| -0.613 | 1.790 | -0.34 | 0.732 |

(Intervention pre-test n = 146, post-test n = 149
Control pre-test n = 34, post-test n = 37.
Intervention condition pre-test M =24.16, post-test M =25.04
Control condition pre-test M =24.39, post test M =26.22).

As hoped, there was a significant correlation between Change in IC and Change in Resilience (r = 0.283; p = <.05), but the magnitude is modest.

IC change to the In-group correlated with Change in Resilience more strongly than correlation to the Out-group (In-group: r = 0.349; p = <.01). This may be because membership in a positively and realistically evaluated in-group is part of perceived self-efficacy and self-worth, corresponding to some of the Resilience items.

### 4.7.2 Discussion of Resilience

The young people who participated in the course started with a medium mean level of resilience (M= 25.1) compared to data published by Connor and Davidson showing an average for young people with a mean of about 30, using the 10 item Resilience scale (Connor & Davidson, 2003).

Other IC Thinking courses report significant gains in resilience using the long form (25 item) Resilience scale. The lack of significance here is somewhat disappointing and does not warrant using the short scale as a proxy to IC coding in assessing future LWWD courses. However, the resilience scores do show a modest and significant correlation with IC scores, which supports the expectation that resilience has some link with cognitive complexity. It is possible that using the 10-item Resilience scale (chosen to avoid item overload for younger participants and to cut down on pre-post test time) may have reduced its sensitivity. The greater gain in resilience scores in the Control condition suggests the impact of test-re-test familiarity and the possibility of social desirability bias. These are known as possible sources of self-report bias, which is one of the reasons why the less-easy-to-fake measure of IC was chosen as the primary measure of effectiveness.

### 4.8 Training Pathway Comparison

There is clear evidence that teachers and British Red Cross educators who attended the face-to-face daylong workshop achieved higher IC gains with participants in comparison with the two hour webinar. For the workshop attendees, students' IC gain is significant, with a very large size effect; whereas the webinar attendees, students' IC gain does not reach significance, and has a small size effect.

**Table 8: Comparison statistics IC by Training pathways**

|  | IC pre | IC post | St dev | t | p | df | Cohen's d |
|---|---|---|---|---|---|---|---|
| Webinar | 1.23 | 1.43 | .610 | 1.791 | .08 non sig | 29 | .4036 |
| Workshop | 1.62 | 2.46 | .105 | -7.902 | <.001* | 92 | 1.24 |

### 4.8.1 Discussion of Training pathways

This result in favour of face-to-face training is most likely due to the workshop enabling trainees to practice the group activities with feedback. Standard IC courses typically have longer training times than the one-day workshop here, but the webinar was even shorter and did not involve them leading the activities. Given that both training pathways were shorter than normal in this study, the strength of the IC gain through the workshop is remarkable.

**Bar chart 5: IC by educator type**
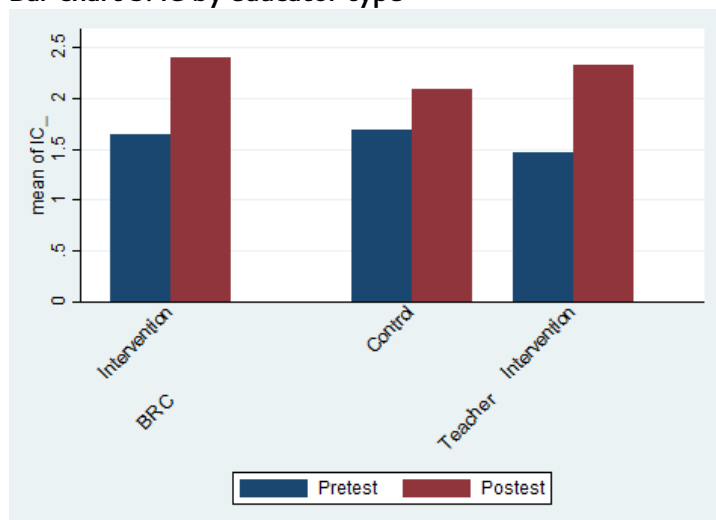


## 4.9.1 Discussion of IC and Educator type

Advocates of critical thinking in PVE-E (Davies, 2016) have questioned whether schools' 'inhouse' teachers are suited as facilitators of courses that promote 'deep' critical thinking such as LWWD. The results here give a qualified 'yes' as long as selected facilitators have prior experience in facilitating group work and keeping sessions as a safe, neutral space for all participants, and express willingness to give time for advance practice.

## 5 OVERALL DISCUSSION

### 5.1 How do these results show that participants are better equipped to engage productively with social polarisation, prejudice and extreme thinking?

Written IC scores increased with participation in LWWD to an average of 2.34, which is at the high end in comparison to other IC Thinking courses, and is remarkable given LWWD's shorter duration. A score of 2 signifies emerging or conditional acceptance of other values, dimensions or viewpoints regarding the issue at hand, though this is not extensively developed. As well, at a score of 2, exceptions about in-group and out-group are being acknowledged and there is an increased tolerance for ambiguity, and an acceptance that others may hold different viewpoints from one's own. This is the crucial point of change with regard to preventing violent conflict: other ways of construing the social world are now made possible, and the categorical, black and white structure of the extremist worldview is dissolving, indicating that the risk of engaging in violence has decreased.

  At a score of 3, people are giving multiple examples and concrete detail to illustrate the implicit gains in IC score 2. Empathy and understanding of others' viewpoints is in evidence. There is explicit awareness that people and groups can have both positive and negative characteristics. Dimensions are fleshed out, multiple causes and conditions for an outcome are argued in some detail. This level of IC enables people to engage with difference constructively. 35 participants showed integration scores of 4 or 5, with an ability to see overarching frameworks to make sense of why different people can have such different views and to perceive links between the differentiated array. At this level of IC, people are becoming problem-solvers and mediators for people in conflict.

  To re-cap, because like-minded individuals easily connect online or in groups, socially shared in-group versus out-group hostilities can coalesce with a like-minded audience for whom, in the

most extreme cases, polarised thinking can inspire violence. By eliciting meta-cognition in the context of a group intervention of student peers, the social nature of thinking (e.g. how group membership or identity can affect how a person thinks) is made conscious. Individuals' commitment to their new cognitive change is strengthened as the IC course peer group provides a social experience of more nuanced, critical thinking. Even though it is likely that the social context yet remains unchanged, participants now are able to operate within it free of polarised inter-group perceptions.

## 5.2 Could factors other than the LWWD course be responsible for gains in IC?

Control groups overall showed significantly lower post-test IC gain in comparison to the intervention groups, in line with expectations.  It must be acknowledged that the control group comprised only two courses (PL and WC, with WC separately showing significant gain), whereas the intervention group comprised eight courses (across Phases 1 and 2). As is common in school research, firstly the schools volunteered to be involved in this pilot, and it is likely that the teachers who then volunteered were motivated to do so, presumably due to the stated aims of LWWD. These non-random effects may, however, be at play for both control and intervention teachers and schools.

   Gains in IC are not easy to elicit, and we argue that the significantly higher gains with the Intervention group reflect the impact of participation in LWWD. It is easy to get a false negative when gathering written data for IC analysis (for example, participants might feel too rushed or too tired at the end of the course to write out their answers to the fullest in the post test). As it is nearly impossible to fake gains in the structure of thinking, especially when participants are tired after a concentrated session, and where pre-planning is not possible, we are confident that these are clear IC results, in spite of the shorter than usual course duration and limited facilitator training time allotted.

## 5.3 Assessing LWWD in the light of EU recommendations

Several high-level EU documents (Council of the European Union, 2017; High Level Commission Expert Group on Radicalisation, 2018; Eur-Lex, 2015) recognise the importance of developing citizenship education, the building of resilience, critical thinking skills, and media and information literacy within European school curriculums. The EU established the *Radicalisation* Awareness Network (RAN), a network of practitioners from across Europe, with four main educational aims (RAN, 2018, p.318):

   - decrease stereotypes, prejudice, and discrimination
   - increase knowledge about democratic orders, norms and values
   - increase a sense of positive citizenship and awareness of radicalisation (including online)
   - address sensitive issues relating to radicalisation in the classroom such as responses to terrorist attacks, foreign policy perspectives, perceived grievances and freedom of speech

   RAN advisory documentation advocates for IC Thinking courses to be run as separate courses (RAN, 2018, p.136). However, the results of this study support the integration of IC courses such as LWWD as part of integrating critical thinking into pan-EU curriculums. LWWD results indicate direct progress particularly regarding decreasing intergroup stereotypes, prejudice, and discrimination, and increasing awareness of radicalisation online, and the importance of freedom of speech to allow differing viewpoints to be heard, promoting an inclusive sense of citizenship. At the same time, LWWD's use of meta-cognition helps to keep participants and teachers safe

from interpersonal and intergroup misunderstandings being triggered unhelpfully in the room. The underpinning values and processes needed for democracy and negotiation are practiced in creative ways, increasing a sense of positive citizenship through an 'ability to live well with difference'.

As state-led policy needs to address structural drivers of violent extremism, such as inequality, discrimination and human rights abuses on their own terms, policy makers can be confident that participants in IC interventions begin to be change makers in their own spheres, equipped with new life skills which in themselves can instigate more pro-social behaviour, ideally at a systemic school and community level.

A possible consequence of building an educational programme of this type, rooted in the Fundamental Principles of a worldwide humanitarian movement, and underpinned by tried and tested methodology, is that our approach could reasonably be replicated in contextualised ways across diverse cultures and circumstances. The transformational effect that it has shown offers hope to an increasingly fractious and disconnected world, and a role in promoting a more harmonious existence which accepts and benefits from diversity.

## 6 LIMITATIONS

The most prevalent limitation of our study was the challenge we faced in recruiting schools and teachers to commit to, and see through, the course of this study. Numerous schools first signed up and then dropped out for perfectly legitimate reasons, such as staff changes or unforeseen circumstances. Consequently, neither participating schools, teachers nor classes could be randomised, fewer schools signed up to provide control groups, and therefore sample bias cannot be eliminated, although effort was made to ensure the overall sample was ethnically representative of schools in England.

There was a moderate amount of missing data, due to a number of unavoidable circumstances, including student absence from illness. In one case, a fire alarm prevented the post-test from being administered immediately after the final session. This data was collected at a later date. These are a few examples of the unfavourable test conditions faced. Rather than inflating gains, it would be more likely for these challenges to reduce IC gains.

## 7 RECOMMENDED NEXT STEPS

Whereas the pre-post IC gains for intervention groups are strong, to support sustainability, suggested additions for the proposed LWWD rollout include implementing a robust digital platform for both students and teachers to access online learning activities, and to involve teachers in a supportive community of IC practice and research, with opportunities to contribute to longitudinal assessment of course impact. So far only IC courses with 14 contact hours or more (Savage & Fearon, Forthcoming; Boyd-MacMillan, et al, 2016) have been monitored longer term, and we are keen to enable sustained impact for LWWD by augmenting the shorter contact time here through online modalities. We suggest more planning time for teachers, more support for their facilitation skills, and an engagement process to include schools' senior leaders to support IC programs in schools and communities, and to work towards state-level integration of this method into existing curriculums for systemic impact.

## 8 CONCLUSION

As hoped, the gains in IC through the experience of LWWD have impacted participants' way of thinking about their self-designated ingroup and outgroup tensions. By dissolving the binary

structure of in-group and out-group categorisations, LWWD increased participants' ability to integrate differing perspectives, helped by anchoring their thinking in a broad array of their own values. Their data shows that an increased interaction of emotions, values and viewpoints with thinking enabled participants to discover a broader view allowing some shared values with those with whom they disagree, which in turn motivated the extra cognitive effort involved in seeing some validity in others' points of view. These cognitive changes are associated with peaceful, pro-social ways to resolve conflict, even if structural conditions and life circumstances remain at present unchanged. This is an emergent model of change: new ways of thinking allow for new ways of interacting with the social world. In this way, LWWD implements many of the EU's suggested approaches for preventing violent extremism or extreme thinking of any kind, and contributes to a European implementation of PVE-E programs. This study also contributes to ongoing research in fragile, conflict affected societies. Corroborating research is being conducted in Pakistan and Nigeria and is planned for Northern Ireland, expanding on the body of sustained evidence for the IC Thinking methodology that underpins LWWD.

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## ENDNOTE

[1] The views expressed in this article are those of the individual authors only, and do not necessarily represent the views of the British Red Cross or of the International Red Cross and Red Crescent Movement.

## APPENDIX

Educator Training Pathways:
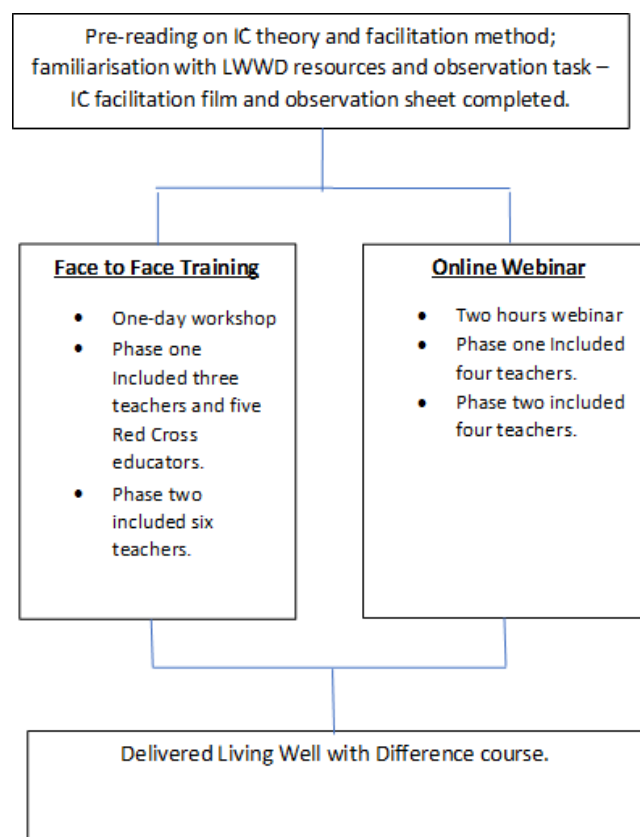
**Paragraph Completion Test:**

**A The community (group) that I identify strongly with is_____**
*(Choose any, in any combination, or add your own. See list of example options in Appendix)*

**B The community (group) that is most different to my group is_____**

**1 When I think about MY community (group) (see A above)**
*(A large blank space is provided for written response...)*

**2 When I think about the OTHER group (see B above)...**
*(A large blank space is provided for written response...).*