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JOINclusion

# Joint problem-solving strategy towards social inclusion of children with a migrant background

## M1.1 - Users Requirements

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| **Title** | M1.1 - Users Requirements |
| **Abstract** | This document describes the activities conducted related to user needs, the current situation in schools and the social challenges analysis. This report provides not only an in-depth evaluation of the state of the art in relevant fields such as the factors influencing empathy or how it can be measured but also guidelines for the development of the JOINclusion collaborative serious and social game. |
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# 1 Introduction

## 1.1 Empathy development in children: a brief overview

Empathy is defined by psychologists in two ways: (a) as the cognitive awareness of another person's internal states, such as thoughts, feelings, perceptions, and intentions; (b) as the vicarious affective response to another person (Hoffman, 2000).

Researchers have identified two interconnected components of empathy: **cognitive empathy** is described as the ability to "intentionally take another person's point of view" (Belman & Flanagan, 2010), while **affective empathy** is defined as the ability to be connected with others'

emotions and feelings (Oswald, 1996). The scientific literature reveals that cognitive empathy is more related to perspective-taking abilities, while affective empathy is more linked to one's arousal level while witnessing others' emotional responses.

According to Hoffman (2000), the key feature of an empathic response is the presence of psychological processes that make an observer feel more congruent with another's situation than with their situation. In order for this to happen, some fundamental cognitive skills are required.

First, empathy must include a metacognitive awareness of oneself; one not only must feel distressed but must be conscious that their feelings are a response to something painful that happened to someone else. That means that mature empathizers have passed the developmental stage of acquiring a cognitive sense of themselves and others as separate physical entities with independent internal states.

Second, empathy also requires a general understanding of how most people would feel in the other's situation.

The third skill underlying the empathic response is the knowledge that other's physical behaviour (e.g., facial expression, posture, voice tone) can reflect how one feels internally, but also the awareness that these outward expressions of feeling can be partially controlled, with the intention of masking the internal feelings.

All this knowledge is quickly integrated into an explanation of the cause of the victim's situation. Although infants and children do not have these cognitive capabilities, they can be empathically aroused by primitive arousal mechanisms: **mimicry, conditioning, and association**.

According to Hoffman (2000), the development of empathic distress can be described by the following scheme:

- **Reactive cry**. In the early months of life, until 6 months or so, infants may cry in the presence of another infant crying, thanks to automatic mimicry and conditioning responses. After six months, the infants should be less susceptible to crying sounds because of their growing ability to regulate their emotions.
- **Egocentric empathy distress**. Toward the end of the first year, infants still respond to a distressed peer by crying. Shortly, infants begin to react less passively to another's distress and engage in behaviour designed to reduce their own distress. This happens because it is still unclear to them the difference between themselves and others; thus, it is unclear the difference between something happening to the other and something happening to the self.
- **Quasi-egocentric empathic distress**. Early in the second year, children's empathic cry starts becoming less frequent. Also, at this age, children begin making helpful advances toward the victim, such as offering physical contact with the victim (e.g., patting, touching) or, later, kissing, hugging, giving physical assistance, getting someone else to help or giving sympathetic reassurance (Radke-Yarrow & Zahn-Waxler, 1984). These actions, however, reveal an important cognitive limitation connected to the lack of a mature theory of mind: children at this age do not realize that others have their own independent inner states so that they know the other is in distress, but they still use helping strategies that they find comforting.
- **Veridical empathic distress**. Major developments occur around the second year. At this age, for the first time, children begin to show awareness that others have inner states (thoughts, feelings, wants) and that another's inner states may differ from their own. This allows children to empathize more accurately with another's feelings and to help others more effectively. In the preschool years, children realize that the same event can produce different feelings in different

people. They also become able to consider another person's desires in judging the emotions that person will feel in a particular situation (Harris et al., 1989). They also start realizing that people can control their emotional expression, so that the displayed emotions may not necessarily be felt. By 6 or 7 years, children begin showing a sophisticated understanding of the connections between their own feelings and the feelings of others. They understand that communicating their feelings can make someone feel better. By 8 or 9 years, children understand that the same event can cause opposed feelings (Fischer et al., 1990). By 12 or 13 years, children can compensate for disparities between what a person feels in a situation and the feelings normally expected. They know, for example, that people who look sad when they should be happy probably feel sadder than people who look sad in situations in which they should be sad.

## 1.2 Empathy in the school environment

Prosocial behaviour, specifically empathy and sympathy (i.e the feeling of concern and compassion resulting from being aware of others' sorrow and distress) have consistently been related to children's positive social functioning (Eisenberg et al., 2006). Children with a high level of empathy are reported to have high social competence and may display more socially appropriate behaviours than children with a lower level of empathy (Eisenberg et al., 2001).

Furthermore, it seems that children who develop high levels of empathy tend to maintain it over time. For example, in a longitudinal study, Eisenberg and colleagues (1996) found that teachers' reports of children of 6-8 years old sympathy were positively related to teacher-rated social skills and socially appropriate behaviour two years before.

At school, prosocial children tend to be popular with their peers (Attili et al., 2010). They also tend to engage in less solitary and reticent play (Layous et al., 2012) and tend to have supportive peer relationships (Clark & Ladd, 2000). Thus, children who experience concern for others and behave sensitively toward others are viewed positively by adults and peers.

Prosocial behaviours, and more specifically empathy and sympathy, also may play an important role in children's school success. Empathic children are more likely

to cooperate in class and exhibit appropriate classroom behaviour and may be well-liked by teachers. Thus, these students may receive more help from teachers and peers and may be more engaged in school activities (Wentzel et al., 1993). Some researchers also show positive correlations between empathy or prosocial behaviour and measures of intelligence, vocabulary, reading skills, and language level (Carlo et al., 2003). For example, in a longitudinal study, Miles and Stipek (2006) found a positive and significant relation between kindergarten or first-grade teachers' ratings of children's prosocial behaviour and literacy achievement across elementary school years. The hypothesis is that children with strong social skills may develop closer relationships with teachers and, as a result, receive more instruction from them.

## 1.3 Ethnic diversity and inclusion in school

According to the European Standard Classification of Cultural and Ethnic Groups (ESCEG), the ethnicity of a person describes the group they belong to as a result of a variety of cultural factors including language, diet, religion and ancestry, combined with a common geographical origin.

Schools provide a wide range of individuals, behaviours, values, and perspectives across the students. Opportunities for interactions with peers from ethnically diverse backgrounds create learning environments that can facilitate inclusion in school. Although having the opportunity to interact with ethnically diverse schoolmates is not enough to improve inclusiveness in schools, there are reasons to expect that the ethnic composition of classrooms and schools can facilitate inclusivity and, vice-versa, unequal ethnical representation can indeed undermine inclusiveness.

In an experimental study, Brown and Bigler (2002) randomly assigned elementary-age children to groups based on colored T-shirts. In this experiment, youth exhibited in-group biases —that might limit inclusive behaviours—when the proportions of the two groups were very disparate.

Several studies point out that greater diversity predicts inclusiveness, as measured by positive social experiences, in school settings. Such positive experiences can include decreased bullying, less loneliness, and a greater number of cross-group friendships. For example, one study of almost 2000 sixth-grade students across ten public middle schools that varied in ethnic composition found that in more

ethnically diverse schools (defined as schools that contained many ethnic groups), students felt safer, less bullied, and less lonely compared with less diverse schools (Juvonen et al., 2006). Studies also report that students in more ethnically diverse classrooms reported less social anxiety and loneliness than their counterparts in more ethnically homogenous classrooms (Bellmore et al., 2004). Furthermore, settings with a greater number of ethnic groups may allow the development of a more complex identity. That means that in diverse settings where ethnic groups are numerous and more evenly distributed, students do not simply define themselves based on ethnic background.

More ethnically diverse schools were also related to stronger student perceptions of fair and equal treatment by teachers. Likewise, school diversity was associated with lower out-group distance, meaning that students reported being more willing to associate with cross-group peers.

These results are consistent with Allport Contact Theory (1954). According to this theory, initial cross-group contact may also result in conflict, or at least discomfort, that can dissipate over time. Several findings suggest that despite the possibility of increased discrimination experiences, the diverse context itself might also serve as a buffer against these experiences. For example, Seaton and Douglass (2014) measured African American high school students' daily racial discrimination experiences. Consistent with prior research, discrimination was associated with increased depressive symptoms the following day. However, this association was present only for those youth attending a predominantly White or predominantly African American high school. For African American youth attending high schools with more ethnically diverse groups, there was no association between daily discrimination and subsequent depressive symptoms.

In addition, diverse school composition can make ethnicity more salient for students. Because of this potential salience, positive ethnic identity development could ultimately create a sense of inclusiveness within the school. This is important especially for youth in late childhood and adolescents. During this period, youth often proceed from a lack of thinking about their ethnicity to increase their commitment to identifying with their ethnic group (Rivas-Drake et al., 2014), which is important for healthy social and psychological adjustment (Umana-Taylor et al., 2014). Having a stronger or more positive ethnic identity may provide a sense of security in ethnically diverse contexts (Rivas-Drake et al., 2017) and may help students develop positive feelings regarding themselves and their ethnic backgrounds.

# 2 Factors influencing empathy-related responses in the school environment: a literature-based picture of user's needs

## 2.1 Children's moral development

To understand the development of children's empathy-related responding and prosocial behaviours towards ethnic and racial minorities, it is important to focus on specific skills of children's moral development, such as conceptions of **respect**, understanding of fairness, and equity.

Respect refers to a positive other-oriented emotion that involves feelings of admiration and esteem towards others based on their moral characteristics and other-oriented virtues (Li & Fischer, 2007). Respect within peer relationships plays a key role as it motivates children to accept different, though equally valid, viewpoints (Damon, 1975). While traditional developmental research has theorized respect as transforming from being unidirectional and authority-focused to bidirectional and other-oriented from early to late childhood, more recent empirical contributions have highlighted that even the youngest children (i.e., 5-year-old) are able to conceptualize respect as an expression of fairness and kindness towards others, consolidating in genuine helping, comforting, or sharing behaviour (Malti et al., 2020).

Overall, respect seems to develop between the early and middle childhood years, stemming from the growth in children's moral reasoning and other social-cognitive abilities (e.g., theory of mind). It is acknowledged, for example, that between the ages of 3 and 5, when faced with two characters, one who has lots of resources and one who does not, children typically allocate resources based on notions of equality, so that everyone gets the same amount (e.g., Rizzo & Killen, 2016).

Around age 8, this tendency of children for equality shifts to equity, thus distributing more resources to individuals who currently have fewer (Rizzo et al., 2016; Rizzo & Killen, 2020). This finding suggests that, as children grow up, they become able to recognize structural inequalities as unfair, want to rectify inequalities by giving more resources to a disadvantaged person and mention equal access and the correction of past inequalities as their reasons for doing so (Elenbaas et al., 2016). Based on these considerations, we can argue that children who are developing notions of equity may be then ready to learn about ethnic- or racial-based inequalities and the ways in which their actions may address these inequalities. As they are motivated to rectify the unfairness, they may engage in more inclusive and other-oriented actions towards ethnic minorities and people with immigrant backgrounds.

In terms of educational practice, this points out the need to adopt strategies that target children's reflections on and reasoning about fairness and equity considerations in peer relationships (Malti et al., 2020). Other existing interventions to promote respect and social inclusion often focus on promoting positive intergroup contact (i.e., spending time with individuals of diverse backgrounds). Overall, there is some evidence showing that such interventions are particularly effective in reducing prejudice or promoting positive intergroup attitudes in children and adolescents (Aboud et al., 2012; Beelmann & Heinemann, 2014; Raabe & Beelmann, 2011).

## 2.2 Children and adolescents' experiences of out-group others

**The Social Identity Theory** (SIT; Nesdale, 2004; Tajfel, 1978) provides an interpersonal framework for studying the interplay between children's emotions and behaviours towards in-group and out-group others. According to the SIT, individuals adopt the values, attitudes, and norms associated with the group they identify with. To better understand the development of discriminatory attitudes and

ethnic prejudice in children and adolescents, Nesdale (2004) adapted SIT and proposed the **Social Identity Development Theory** (SIDT). According to this theory, children's ethnic prejudice develops through four stages: From birth to around age 2, children have little awareness or meaning assigned to social groups (Stage 1). At around age 3, children begin to differentiate others based on objective indicators of social groups (e.g., skin color; Stage 2). Next, children begin to identify with their own social group (and show a preference for their group), occurring around age 4 or 5 (Stage 3). By around age 7, children's biases begin to crystalize, and as a result, children possess and express prejudice against out-groups (Stage 4). Therefore, according to the SIDT, children likely hold greater discriminatory biases and prejudice around age 7 than when younger.

These considerations imply that, especially from age 7, children's empathy-related responding might differ based on the characteristics of the targets (Eisenberg et al., 2015; Peplak & Malti, 2021), with children being more likely to show liking, positive thoughts, and perspective-taking (i.e., understanding another's thoughts and emotions) towards members of their same perceived race or ethnicity. However, to date, only a few studies have focused on children's differential empathy based on race or ethnicity (see O'Driscoll et al., 2021).

In their review of intervention studies with children, Aboud and Spears Brown (2013) noted that interventions that focus on increasing children's empathy, particularly if they offer specific or concrete examples of discrimination and exclusion, are most effective at reducing bias in young children compared to other interventions. Also, it has been found that adolescents who can feel sympathy or anger regarding social injustices are more likely to take action against them (Banales et al., 2021). Based on these literature findings, it is reasonable to assume that children who have the opportunity to develop an emotional connection with marginalized groups and who are motivated by concerns about equity and fairness, are likely to continue to experience concern for victims and awareness of discriminatory biases (Hazelbaker et al., 2022).

In this sense, schools certainly provide knowledge about diversity and stimulate student motivation and effort. In highly diverse schools, the learning of diverse

cultures takes place every moment informally but may also be stimulated in various ways in classroom discussions, cultural arrangements and planned exposure of identities and diverse ways of teaching. Therefore, it is important to emphasise that knowledge/information and planned development provide a variety of options that schools have for stimulating intercultural empathy and inclusive citizenship. Students' information and understanding of cultural diversity are important predictors of intercultural empathy, thus creating opportunities for schools to support social inclusion (Solhaug & Osler, 2017).

## 2.3 In-group norms and social expectations about inter-group contact

There is strong evidence that intergroup contact can have beneficial effects on emotion-related responding toward out-groups. Research stemming from the Social Reasoning Developmental model (SRD; Rutland et al., 2010) provides interesting insight into developmental patterns related to children's and adolescents' own attitudes and reasoning about cross-ethnic relationships. More specifically, the SRD model posits that children and adolescents weigh both moral concerns for inclusivity, fairness, and others' well-being with concerns for group identity and optimal group functioning (i.e., making a group work well) when making decisions involving intergroup relationships (McGuire et al., 2019). For example, research using this framework showed that, across development, race- or ethnic-based exclusion is rejected because it is unfair. However, with age, children's priorities regarding moral and group concerns change (Rutland et al., 2010) and more importance is attributed to ethnic group stereotypes (Elenbaas et al., 2016; McGuire et al., 2019). Studies have shown that, for instance, in the absence of individuating information regarding an out-group peer (e.g., competence, activity preferences), adolescents are more likely than children to

justify the exclusion of an out-group member using stereotypic assumptions (Horn, 2003).

Some authors argue that stereotypes and prejudices are predominantly the result of shared in-group norms. In line with this, it is recognized that children and adolescents' cross-ethnic friendship and overall relations are strongly influenced by social approval norms of intergroup contact shared in their immediate social context (e.g., family, school, peers). More specifically, as children grow older, peers' and friends' expectations and norms about intergroup contact become increasingly important in shaping their social experiences (Pehar et al., 2020), influencing their relations with out-group members in terms of attitudes and behaviour. For instance, De Tezanos-Pinto et al. (2010) found that perceiving norms against intergroup contacts among in-group friends was related to adolescents' negative out-group attitudes. Also, it has been found that perceiving positive norms about intergroup contact is related to more intergroup empathy (Capozza et al., 2013). Finally, in a recent work by Pehar et al. (2020), peer norms supporting inter-group contact predicted lower in-group bias and social distance towards the out-group.

## 2.4 Teacher's Values for Diversity

Teachers play a crucial role in promoting students' social inclusion due to their proximity to students and the opportunity to personally manage school interaction patterns and activities (Farmer et al., 2011). Based on social psychological research on intergroup relations (Park & Judd, 2005) and multicultural education perspectives (Banks, 2015), teachers may adopt two approaches to cultural diversity: the first focuses on the promotion of equality and inclusion, while the second values cultural pluralism (Geerlings et al., 2019; Schachner, 2019). More specifically, the equality-inclusion approach emphasizes the value of promoting fairness and equality as well as motivating students to establish contact and cooperation (Bayram Özdemir et al., 2022; Bayram Özdemir & Özdemir, 2020;

Schachner et al., 2019, 2021). Cultural pluralism involves emphasizing cultural diversity as a valuable learning opportunity for all students (Schachner et al., 2016). Teachers adopting this approach take account of students' diverse cultural backgrounds in everyday school activities by providing opportunities for all students to share the customs, traditions, and values of their cultures through multicultural educational activities (Civitillo et al., 2017). In this way, teachers might improve the cultural awareness and out-group orientations of ethnic minority and majority students and, at the same time, promote a diversity-friendly climate at school (Schwarzenthalet al., 2018). In fact, adolescents, particularly members of ethnic minority groups, highlighted a greater sense of school belongingness as well as a higher academic achievement in school settings where both teachers and students valued cultural pluralism (Celeste et al., 2019; Schachner et al., 2016). A growing literature has supported the potential of these two cultural diversity approaches. A recent study by Karataş et al. (2022) with a large sample of adolescents in Italy has provided evidence of the importance of perceived equal treatment by teachers in relation to the increase of adolescents' positive intergroup contact over time (e.g., warm and respectful interactions). A similar result was found by Miklikowska et al. (2021) in Sweden, who examined the role of a cooperative classroom climate in the development of youth attitudes toward immigrants, showing that perceptions of classroom climate as more cooperative were associated with lower anti-immigrant attitudes. These findings would confirm the role of the socialization context in shaping youth sensitivity to moral beliefs concerning fairness and justice (Rutland et al., 2010).

However, it should be acknowledged that teachers' practices, their interactions with students, and the overall learning environment might reflect teachers' beliefs about cultural diversity. As part of any teacher's professional development, teachers need time to engage in explicit reflection on their cultural diversity beliefs and also to understand the possible consequences of these beliefs (Fives & Buehl, 2016). The possible benefits of self-reflection training for children would be twofold. First, they might allow teachers to notice their own biases and misperceptions toward cultural diversity as well as their ability to handle cultural diversity in schools

(Civitillo et al., 2018; Juang & Schachner, 2020). Second, providing inclusive training programs might increase teachers' awareness of the value and strength of cultural diversity as an opportunity to enrich learning processes for all students rather than as a threat (Juang & Schachner, 2020).

# 3 Measuring empathy and empathy-related responses in the context of ethnic diversity

Ethnocultural empathy has been studied for a relatively short time. The first study on the topic dates to 1996, when Ridley and Lingle (Ridley et al., 1996) described the first detailed cultural empathy model, which defines three components described as **cognitive**, **emotional-affective**, and **communicative** empathy. The cognitive component concerns the ability to share the perception of the world with individuals who are culturally and ethnically diverse. The emotional-affective component consists of being aware and sharing the situations and/or emotional states faced by individuals with different cultural and ethnic backgrounds. The communicative component refers to the expression of thoughts and feelings that show a vicarious sharing of emotions with people from other ethnocultural backgrounds. Therefore, ethnocultural empathy is a multi-component and complex construct, so its measurement in children is a difficult matter. Thus, a valuable means to assess ethnocultural empathy in children can be stories or videos. Self-report is one of the most commonly used techniques for assessing empathy and empathy-related responding. There are three kinds of self-report measures: questionnaires, self-reports on picture stories, and stimulated experimental situations. Some tools used in the literature for measuring empathy and empathy-related responding in the context of ethnic diversity are presented below.

## 3.1 Self-report measurements

**The Scale of Ethnocultural Empathy (Wang et al., 2003)**

The Scale of Ethnocultural Empathy (SEE) is a self-report questionnaire for adults and adolescents containing 31 items. All items are rated on a 6-point Likert-type

scale (1 = strongly disagree that it describes me to 6 = strongly agree that it describes me).

The questionnaire is organized into 4 subscales:

- **Empathic Feeling and Expression.** It assesses the emotional reactions associated with the observation of discrimination against people of different ethnicity. It includes items such as "When other people struggle with racial or ethnic oppression, I share their frustration," "When I hear people make racist jokes, I tell them I am offended even though they are not referring to my racial or ethnic group" and "I seek opportunities to speak with individuals of other racial or ethnic backgrounds about their experiences."
- **The Empathic Perspective Taking**. This subscale evaluates attempts to understand the emotions and experiences of individuals with different ethnic backgrounds. It includes ." I feel uncomfortable when I am around a significant number of people who are racially/ethnically different than me," "It is difficult for me to put myself in the shoes of someone who is racially and/or ethnically different from me" and "I can relate to the frustration that some people feel about having fewer opportunities due to their racial or ethnic backgrounds."
- **The Acceptance of Cultural Differences.** It measures the ability to accept and understand traditions of ethnic groups other than one's own. A few item examples are: "I feel irritated when people of different racial or ethnic backgrounds speak their language around me," "I don't understand why people of different racial or ethnic backgrounds enjoy wearing traditional clothing" and "I do not understand why people want to keep their indigenous racial or ethnic cultural traditions instead of trying to fit into the mainstream."
- **The Empathic Awareness**. This subscale measures the degree of awareness of discriminatory events concerning different ethnic groups. It includes items such as "I am aware of how society differentially treats racial or ethnic groups other than my own," "I recognize that the media often portrays people based on racial or ethnic stereotypes" "I can see how other racial or ethnic groups are systematically oppressed in our society."

## 3.2 Self-report on picture-stories

**Multicultural FRIC (Albiero et al., 2022)**

The Multicultural FRIC is an adaptation created by Albiero and colleagues (2022) of the FRIC (Feshbach and Roe Affective Test for Empathy) to multicultural settings. The interview was initially devised to measure general empathy in children aged 6 to 10 years. It is a semistructured
interview during which the children are shown emotion-arousing stimuli.
The stories involve characters belonging to different ethnic groups (Caucasian, Chinese,
Black African, Asian Indian). The emotion-arousing stimuli consist of images accompanied by descriptions of simple stories in which the main character with the physical characteristics of a particular ethnic group experiences a different emotion.
Participants are asked several questions about these different situations and their emotional reactions. A set of questions explore the cognitive component of empathy, as the **social comprehension** and the ability to recognise psychological states and physical clues (e.g facial expression); the second set aims to investigate the emotional component of empathy (**affect match**), such as the affective responsiveness in witnessing an emotional event involving another person. The questions are shown in Table 1.

**Table 1**. Description of Albiero's Multicultural FRIC adaptation questions

| |
|---|
| **Social comprehension** |
| 1 How does the main character feel?" (R1) |
| 2 How strongly does the character feel (R1), a little, quite a lot, a lot?" (R2) |
| **Affect match** |
| 3 If you witnessed a situation like this, how would you feel?" (R3) |
| 4 'How strongly would you feel (R3), a little, quite a lot, a lot?' |
| **Cognitive processes underlying empathic responsiveness** |
| 5 Why do you feel this way (R3)? |

Hence, the affect match between the character portrayed in the story and the emotion experienced by the child is assessed on a four-point scale (Table 2).

The social comprehension assessment is shown in Table 3. The higher the score, the more complex cognitive attribution was referred to by the child during the evaluation.

By combining the two scores, according to the instructions in the Empathy Continuum Scoring System (ECSS, Strayer et al., 1992), a single empathy score is obtained.

**Table 2. Description of the affect match assessment**

| SCORE AFFECT MATCH |
|---|
| 0 the child felt no emotion |
| 1 the child's emotion was similar in valence (euphoric vs. dysphoric) to the one he/she reported identifying with the character |
| 2 the child's emotion was the same as the character's, but with a different intensity |
| 3 the child's emotion and its intensity were the same as the character's |

**Table 3. Description of the social comprehension assessment**

| SCORE LEVEL OF COGNITIVE ATTRIBUTIONS |
|---|
| 0 inaccurate identification of the character's emotion |
| 1 accurate identification of the character's emotion, but no affect match |
| 2 no or irrelevant attributions for affect match |
| 3 attributions based on events alone |
| 4 attributions mentioning the character in a specific event |
| 5 attributions associating the character's experience with the child's own |
| 6 attributions mentioning the character's inner state or viewpoint |
| 7 explicit role-taking |

## 3.3 Behavioural task

**Sharing tasks (Spinrad et al., 2022)**

- **Chocolate sharing task.** This task is similar to the one used by Böhm and Buttelmann (2017) and Fehr et al. (2008). Pictures of 10 same-sex peers (5 White, 5 Black) are presented to the children. Participants have two options that vary in the level of cost to self and generosity to others. In the first choice, children could choose to give either zero chocolates to the other while getting one chocolate for themselves (selfish choice) or giving two chocolates to the other and getting zero chocolates for themselves (altruistic option); in the second choice, the children could choose to give either zero chocolates to the other while getting two chocolates for self (selfish choice) or giving one chocolate to other and one chocolate to the self (equitable option). In the next choice, children could give zero chocolates to the other and give one to the self (selfish option) or give one to the other and one to the self (equitable option). In another option, children could give one chocolate to the other and zero to self (altruistic option) versus giving no chocolates to the other and one chocolate to themselves (selfish option). In the

final option, children could choose to give two chocolates to the other and get two chocolates for themselves (equitable option) versus giving zero chocolates to the other and getting three chocolates for themselves (selfish choice). In the end, children are told that they can keep all the chocolates earned in the task. Each forced choice option is given for both Black and White peers (counterbalanced), resulting in 10 trials overall.

- **Star-sharing task.** A similar task has been used by Ongley & Malti (2014). In this task, children are given ten glow-in-the-dark star stickers. Then, the experimenter shows the child a picture of a same-sex peer (either Black or White). The experimenter explains to the child that there were not enough stickers for the children coming to the laboratory the next day. Then, the experimenter says that if they wished, they could give none, some, or all their glow-in-the-dark stickers to the child shown in the picture by putting any of their star stickers in an envelope and sealing it. The experimenter leaves the room and returns when the participant finishes distributing the stickers.

- **Money sharing**. A certain amount of money is given to the child participant. Then, the child watches a short video that shows two children (one Black and one White) who are disappointed and sad because they did not have enough money to go on their school trip. After the video, the experimenter says to the child that if enough children donated their money, the children in the video might be able to afford to go on their school trip. Participants are instructed that they could give none, some, or all their prize money to neither, one, or both of the children in the video by putting their money in the pouch and zipping it while the experimenter is out of the room. The experimenter leaves the room and comes back when the child finishes distributing (or not) their money.

## 3.4 Self-report stimulated in experimental situations

**Film stimuli (Spinrad et al., 2022)**

A series of films are shown to the child participant. Bullying scenes are featured in each short film; the perpetrator is always White, similar in age to the participant, and the sex of the actors in every video is matched to the participating child (White victim boys, White victim girls, Black victim boys, Black victim girls).
After watching all the films, two variables are measured:

- **Self-reported empathic concern.** After the presentation of each video, children are shown a picture of the victim and asked to report on a four-point scale from 0 (not at all) to 3 (a whole lot) how much they felt sad, sorry for, unhappy, upset, nervous, afraid, and happy (Eisenberg et al., 1991).
- **Facial responses.** Across the film's duration, children's facial responses are coded using a 4-point coding system (0 = no display of the emotion; 3 = strong display of the emotion). The coding system is based on Eisenberg's prior work (1991). Thus, three dimensions are coded: Children's concerned attention, anger, and sadness.

# 4 Methodological framework

## 4.1 General principles of Social Emotional Learning (SEL)

According to the Collaborative for Academic, Social, and Emotional, Learning (CASEL) Social Emotional Learning (SEL) can be defined as "the process through which all young people and adults acquire and apply the knowledge, skills, and attitudes to develop healthy identities, manage emotions and achieve personal and collective goals, feel and show empathy for others, establish and maintain positive relationships, and make responsible and caring decisions." (www.casel.org)

**Social awareness** and **relationship skills** are two basic components of Social Emotional Learning.

Social awareness includes the ability to empathize with others, especially with people with different backgrounds. Social awareness skills are:

- Identifying social cues (verbal, physical) to determine how others feel;
- Taking others' perspectives;
- Demonstrating empathy and compassion;
- Showing concern for the feelings of others;
- Understanding and expressing gratitude;
- Recognizing strengths in others;
- Identifying diverse social norms, including unjust ones;
- Recognizing situational demands and opportunities;
- Caring about and being motivated to contribute to the well-being of one's family, friends, school, community, the environment, and the greater good.

Relationship skills include developing positive relationships, resisting pressure, and seeking out and offering help, particularly with people with different backgrounds. This set of skills also includes:

- Initiating contact with others and cultivating friendship;
- Sharing one's thoughts and feelings (appropriately);
- Communicating effectively;
- Developing positive relationships;
- Demonstrating cultural humility;
- Practicing teamwork and collaborative problem-solving;
- Resolving conflicts constructively;
- Approaching relationships with positive presuppositions;
- Resisting negative social pressure;
- Resisting stereotypes;
- Standing up for the rights of others;
- Showing leadership in groups;
- Seeking or offering support and help when needed.

Research shows that children with social and emotional skills have stronger relationships with peers and teachers, better grades (Bierman et al., 2010), higher levels of well-being, and engage in less risky behaviour (Jones et al., 2015).

SEL skills also positively impact empathy and cooperative learning (De Souza et al., 2022). Empathic students are more cooperative in class, have better relationships with their teachers, and are more engaged in school. Increased empathy can also decrease bullying and aggression among kids and make them more inclusive toward classmates. Besides, students who engage in more frequent cooperative learning are more likely to report performing prosocial behaviour toward their classmates (Feshbach et al., 2005).

## 4.2 SEL in the school environment: creating an effective SEL program at school

The features of an effective SEL-based program are described as follows:

- Durlak and colleagues (2011) found that the most effective SEL programs were those that included four elements represented by the acronym **SAFE**: (a) **Sequenced activities that lead in a coordinated and connected way to skill development** (b) **Active forms of learning that enable children to practice and master new skills** (c) **Focused time spent developing one or more social and emotional skills**, and (d) **Explicit defining and targeting of specific skills**.
- **Supportive contexts**. Supportive school and classroom contexts include (a) adult and child practices that build skills and establish prosocial norms; and (b) a climate that actively promotes healthy relationships, support, and positive classroom management (Jones et al., 2018).

- **Build adult competencies**. This includes promoting the integration of teachers' social and emotional competence and their pedagogical skills.

- Effective SEL-based programs are **equitable, culturally responsive, trauma-sensitive, and socially just**. This includes (a) building family-school-community partnerships that support the use of SEL skills at home and in other out-of-school settings; (b) fostering culturally competent practices that ensure SEL practices are supportive and beneficial for students of all backgrounds and identities; (c) Understanding of how SEL can be used to break the cycles of trauma and social, political, and economic inequality; and (d) considering how specific school, state policies may influence children interaction with SEL programming.

- **Set reasonable goals**. This includes articulating a series of short- and long-term outcomes that are reasonable goals or expectations for children. These include short-term indicators of children's growth and progress in specific SEL activities and a longer-term assessment of future impacts.

# 5 Collaborative game-based tools and interventions using technology

Over the last few years, there has been a shifting trend to investigate how games and technology-based interventions can have a positive impact on mental health, emotional intelligence, and prosocial behaviour (Carissoli & Villani, 2019; Harrington & O'Connell, 2016; Villani et al., 2018). Especially for younger people, educational videogames and the use of technological tools can become useful tools for the promotion of prosocial skills thanks to their engaging characteristics. In addition, during these last years, the Positive Technology movement emerged in response to the growing interest in the potential of digital technologies to foster positive growth of individuals and groups (Gaggioli et al., 2019). A brief overview of game-based tools and technology-based interventions fostering empathy and empathy-related responding is presented as follows.

## 5.1 Game-based tools

**The Chase (Modafferi et al., 2016)**

The Chase was developed to explore cooperation skills in children. The game is based on the public goods theory (Cornes & Sandler, 1996) which requires players to trade off their private goods to preserve the benefit of the team. In this game, four players take turns moving their teams' pieces along a series of steps, with the aim of running away from the "Giggle monster," whose final goal is to chase the players. On each turn, a maximum of two moves are randomly assigned (meaning that either both player and monster receive one move each, or one of them receives two moves whilst the other gets none). Each player carries a bunch of balloons which, at the end of the game, must sum to a minimum number (which is 60). If, during the game, the monster lands on one or more players, five balloons

are given to each. To avoid this, players may cooperate with each other by moving other players' pieces immediately in danger of being caught by the monster. This action costs one balloon per move for the player helping others. Players, therefore, need to understand when it is advantageous to sacrifice some of their private balloons to maintain the team's ability to escape and also how to interact socially and cooperatively in order to do so.

**REAL LIVES (Bachen et al., 2012)**

REAL LIVES game allows players (adolescents) to live the life of a person from a different country that is assigned casually by the game or chosen by the player. By playing REAL LIVES players can vicariously experience what life could be like for a boy or a girl in another country, including education, employment, marriage, having children, confronting diseases and natural disasters, and so on.

When the character is "born," the player sees the character's face and how they would be at age 15. The software uses real-world data to determine the probability of events that are likely to happen in the character's life in their particular birth country. During the game, background information on the country's history, culture, economics, and other factors is presented to the player. Players can click a button to make their characters grow one year at a time, and during this time, they can learn more about what happened to them or about the choices they are asked to make (e.g., to propose marriage or apply for a job).

REAL LIVES contains elements that foster the cognitive and affective components of global empathy, as many of the character's life events can elicit affective responses. Furthermore, based on what their character has experienced, players may take actions to help their character advance educationally or economically or to promote human rights in a different country from their own.

**Zoo U (Craig et al., 2016)**

Zoo U is an intelligent social tutoring system (ISTS) designed to both assess and build prosocial skills for children (7 to 12 years) across six social skill areas: impulse control, communication, cooperation, social initiation, empathy, and

emotion regulation (www.zoougame.com). During the game, children interact with virtual teachers and classmates to learn how to care for their animals. As children progress through the game, they receive personalized feedback about their performance.

**Hall of Heroes (DeRosier & Thomas, 2019)**

Hall of Heroes is an online adventure game developed for adolescents (www.centervention.com/hall-of-heroes/). Players navigate through a virtual school-like world, engaging with other characters to solve social problem-solving tasks. The school-like setting allows the inclusion of tasks that directly address several aspects of middle school, which reduce concern and anxiety connected to the school environment. In addition, the school setting allows the simulation of challenging social situations, such as how to deal with a bullying situation. Hall of Heroes is also populated with a large and diverse cast of nonplayable characters (NPCs) who serve narrative and pedagogical roles that mirror traditional instructional roles (as a peer, teacher, mentor, learning companion, etc.).

**Quandary (Hilliard et al., 2018)**

Quandary is a free online game that uses engaging storylines to challenge youth to make difficult ethical decisions that require players to consider the perspectives of others (www.learninggamesnetwork.org). According to the game creators, the central aim of Quandary is to "strengthen the moral compass of players by developing the skills that help them recognize ethical issues and deal with ethical situations in their own lives. These skills include critical thinking, perspective e-taking, and decision-making" (www.quandarygame.org).

In Quandary, the player takes the role of the captain of a space colony and, as captain, they must make key decisions to face several problems of the colony. These problems have no clear solutions, but the player's decisions will have serious consequences for everyone in the colony. In each episode, four possible solutions are available, each with two endings: one solution is successful and improves colony morale, the other one is implemented imperfectly and even

though the colony solves the problem, morale is damaged. Each episode lasts approximately twenty minutes, and each of them presents different problems.

**S.S. GRIN (Thomas & DeRosier 2010)**

The S.S.GRIN is an intelligent social tutoring system (ISTS) for children that invites the player to participate in a social narrative game. Before social training begins, the child customizes the appearance of their avatar, which will be their visual representation in the game. Being able to customize the avatar's gender and appearance enhances children's identification with their character, which in turn increases their engagement and learning. Children can communicate with other characters by choosing from a menu of dialogue and behavioural options. As the player moves the cursor over each option in the menu, the avatar's facial expression changes to reflect the emotional intent of that communication or action. This interactive element will help children recognize visual cues associated with non-verbal communication.

The core of the game is the social problem-solving challenges. For example, the first scene represents a moderately difficult social situation where the avatar is bullied. During this interaction, the game presents to the child a set of three choices: to withdraw (passive response), to escalate the conflict (aggressive response), or to manage the situation in a nonaggressive but assertive way (assertive response). Throughout three exchanges, the player's responses are tracked by the software and scored according to type (passive, aggressive, or assertive).

The primary skill that the game proposes to strengthen is impulse control, which is a basic social skill that is centrally important to many other social skills, such as cooperation and communication. This game demonstrates the importance of inhibiting impulsive responses and provides practice in applying impulse control specifically for social situations.

**Gypsy Maze (Simonovitz et al., 2017)**

Gypsy Maze is an online game for adolescents whose purpose is to reduce prejudice against an ethnic minority by requiring participants to take the perspective of a member of a marginalized ethnic minority group. It is based on perspective-taking theory, which proposes to reduce prejudice by changing "people's perspectives so that they are coordinated with the experiences of members of other groups." The game recounts the story of an 18-year-old Roma adolescent who arrives in Budapest, Hungary, to start a new life. The story features a realistic account of what life might be like for a Roma adolescent: the gameplay consists of vignettes in which the main character's daily life is described. Crucially, the story is written from the perspective of the Roma protagonist, so the text is written in the second person. At several points in the story, participants can make decisions that will affect the narrative.

## 5.2 Intervention using technology

**E-contact interventions**

White and Abu-Rayya (2012) originally developed the term E-contact and defined it as "computer-mediated contact involving an engagement of self in the intergroup relationship." It consists of an interaction where in-group and out-group members never physically meet but engage in a synchronous text-based interaction mediated by online technology. Most interventions were developed within the framework of **Allport's Contact Theory** (1954).

Advantages of E-contact interventions include:

- Engagement of the Self;
- Participation of both minority and majority members;
- Synchronicity in contact;
- Potential to be less anxiety-provoking than direct contact
- Facilitation of Self-disclosure

Austin (2006) discusses the **'Dissolving Boundaries'** project, initiated in 1999, linking schools within Northern Ireland and the Republic of Ireland that continues to be implemented and evaluated today. This project integrates tenets from both Allport's Contact Hypothesis and Gaertner and Dovidio's (2000) **Common Ingroup Identity Model**, whereby similarities between distinct groups are more readily recognized through the development of a common identity. Small groups of primary- and high school–age students and their teachers used online videoconferencing to engage in a range of collaborative tasks together. The outcomes of this program to date have included **greater cultural awareness**, **greater student tolerance of difference**, and **greater teacher recognition of similarities among Catholics and Protestants** among those involved in the program. The program also helped to promote **social inclusion** across mainstream and special needs schools.

Hoter et al. (2009) developed an online collaborative learning course for Secular Jews, Orthodox Jews, and Arabs in Israel, characterized by conflict and animosity. The authors also applied the **Online Intergroup Contact Hypothesis (OICH) Model**. The OICH includes the following conditions: the discussion of only nonconflictual content; gradual, intergroup contact over at least one year; a move from text-based to face-to-face encounters; and teachers must also be of the same cultural background as the students. Students, during the course, completed tasks such as creating video clips and developing an educational game. These tasks were based on subjects taught in the schooling system, such as science, mathematics, current affairs, health, drama, and music. Students worked collaboratively in a synchronous and asynchronous format online via forums, blogs, video conferencing, and eventually face-to-face meetings. Although the effectiveness of the OICH program was not evaluated via changes in pre- and post-test out-group attitudes, student comments provided open-ended feedback indicating that the program helped them develop greater intergroup empathy and feelings of commonality.

One of the longest-lasting online cross-cultural education programs is the Soliya Connect program, first established in 2003. Today, more than a decade later, the

program links students from more than 100 universities and 27 countries in the Middle East, North Africa, South Asia, Europe, and North America. Soliya involves online videoconferencing where students can connect globally to a "community of peers and engage in facilitated, sustained and substantive dialogue, and build respectful relationships across national, cultural, religious and ideological boundaries" (Soliya Connect Program, 2013). Although quantitative and qualitative feedback from participating students and teachers is positive, long-term evaluations of the Connect program's effects on improving intergroup anxiety, trust, bias, and prejudice have not been conducted.

**Bystander video intervention**

The **prosocial bystander intervention model** suggests that bystanders go through a series of steps in order to intervene in a problematic situation: (1) notice a behaviour or an event, (2) interpret the behaviour or event as problematic, (3) feel a sense of personal responsibility to act, (4) decide what to do, and (5) implement action (Latané & Darley, 1970). This model has been applied to multiple topics.

Building upon these existing bystander intervention programs, Cornell University's Skorton Center for Health Initiatives at Cornell Health developed a 20-min video entitled **Intervene,** which models how students can successfully intervene in a prosocially effective way in a variety of situations: an alcohol emergency, emotional distress, hazing, intimate partner violence, racial bias, sexual assault, and sexual harassment. Intervene was designed to be used primarily among undergraduate and graduate college students, with secondary audiences including high school students and university staff. It is based on **Bandura's social learning theory** (1969), which considers the ways in which individuals acquire and maintain behaviours, with an emphasis on social influence and observational learning. Essentially, people can acquire new behaviours by observing the actions of a model and subsequently mimicking those behaviours.

Each scenario reflects the prosocial bystander intervention model by portraying individuals going through a common set of steps when determining if and how to

intervene in any type of situation (Latané & Darley, 1970). For example, In the racial bias scenario, a group of four female friends are waiting in line for a party. When the group reaches the front door, the white women in the group are invited inside and the black woman in the group is denied access. The group of friends address the white man at the front door and the women decide to leave the party together.

# 6 Scenario design: learning goals and technical user requirements

## 6.1 Story and scene design

The game design translates the principles of the **socio-emotional learning** approach into a series of **interactive and animated** scenarios. The game will target children from 8 to 12 years, as this period as been described in the scientific literature as crucial for the development of social competence and abilities surrounding empathy-related responding (as previously mentioned in sections 1.1 and 2.2). Also, children during this phase seem particularly sensitive to the development and crystallization of ethnic-based prejudice. Each scenario consists of **6 levels**, with progressively more complex skills, from the identification of others' emotions based on expressive and social cues, passing through gathering information and understanding of cultural diversity, to team working and collaborative problem-solving (see below). For some levels of the game, the player's choice will be designed to impact the outcome. Teachers can combine the levels based on their needs. The scenario will adopt the player's point of view while later, where the players will need to collaborate, they will be able to create their own avatar. Before starting the game, socio-demographic information, such as sex assigned at birth, age, and ethnicity, will be collected (especially for assessment purposes). Collection and processing of personal data will fulfill all the requirements contained in the General Data Protection Regulation (EU 2016/679).

## 6.2 Environment and Emotion design

The game environment has been thought to simulate the basic elements of a school environment. The emotions designed for the game are emotions that young children are likely to experience or see other people displaying in their daily life. In the proposed scenarios, players primarily deal with negative emotions. They are invited to perceive others' emotional states and take their perspective (i.e., sadness in the first scenario, and embarrassment in the second one).
Emotions, in terms of expression and intensity, can be presented using graphical representations of facial expressions (instead of using labels – written text).

## 6.3 Game characters

Characters in the scenarios are:

- the player, who is not visible in the individual version (first-person interaction) but important in the collaborative one (third-person view);
- the target character, a child (boy or girl, randomly assigned) with a migratory background (the ethnicity could be selected based on the main ethnocultural groups present in the areas where the game will be experimented, e.g., Caucasians, Indians, Chinese, and Africans.
A quick identity profile for the target character will be presented (name, country of origin, religion, mother tongue and/or other spoken languages, etc.);
- the narrator/facilitator, to support the development of the game interactions and provide hints when needed/required, a narrator will be implemented. When possible, it will be implemented in the form of a colleague (peer) placed in the game scene.
- other classmates.

## 6.4 Feedback design

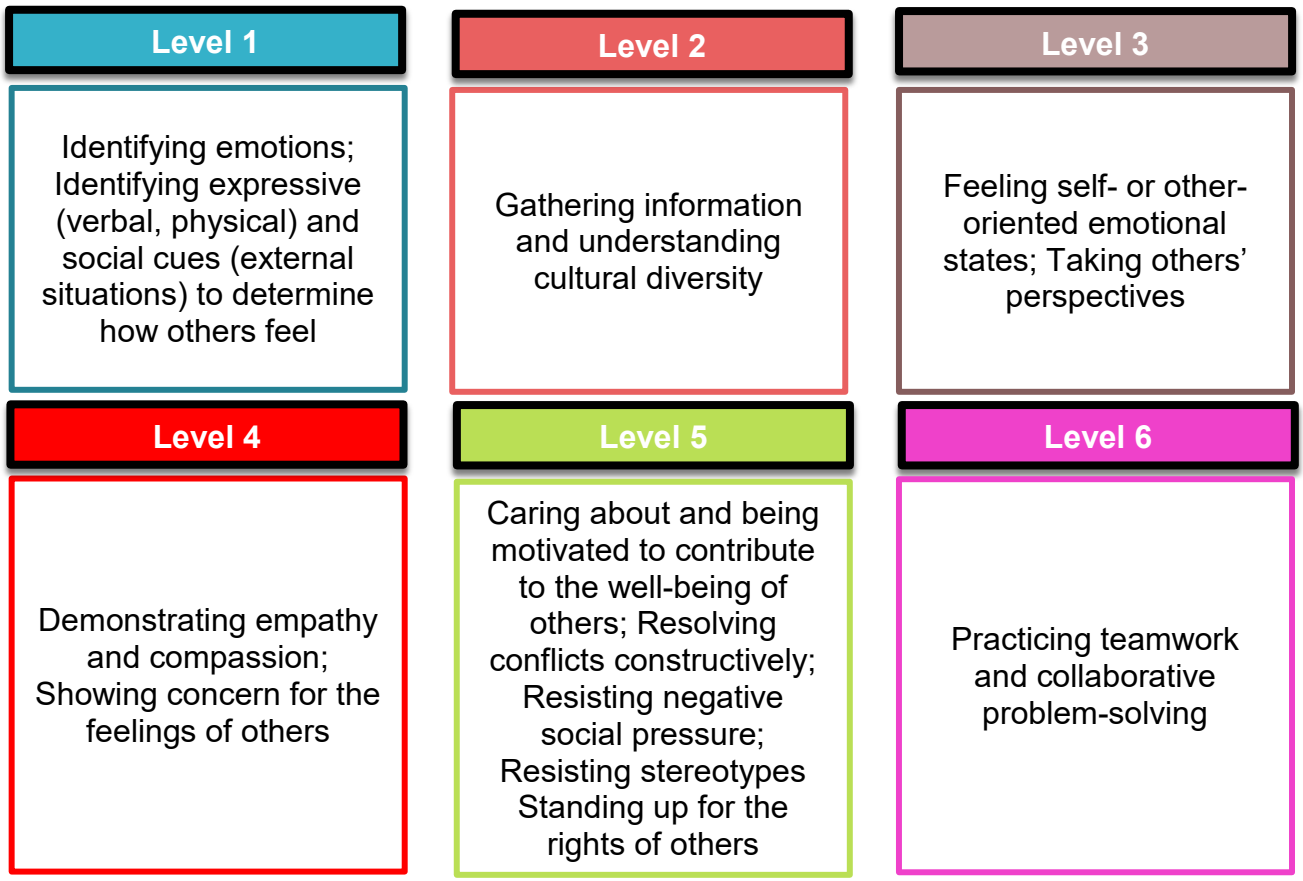
For some levels of the proposed scenarios, the game responds to children's choices with tailored feedback. Also, when non-target responses are selected, feedback will be given to encourage the player to try again (in the case of emotion recognition, for instance, the player could be invited to look at specific physical cues to identify the correct emotion, or show in which situation the selected emotion [non-target] is more likely to be experienced, and then ask to try again). In addition, in some circumstances, the choice made by the player might have an impact on the development of the situation. At the end of each level, a quick explanation of the consequences related to the non-selected choices can be presented.

## 6.5 Assessment

Pre- and post-test questionnaires measuring the main skills targeted by the game will be administered. In addition, all choices made by the player while interacting with the game will also be used for assessment purposes.
A detailed description of the measures and a coding scheme will be provided in the next project's output.

## 6.6 Learning goals – Overview

Based on the literature mentioned above and the methodological approach outlined (i.e., Socio-emotional Learning), the identified learning goals for the scenario development are as follows:




## 6.7 Technical requirements

The identification of the minimal requirements that the school environment needs to support is under development. Currently, the standard solution for schools is to have a **mobile device** (smartphone, tablet) running **Android operating system**. The game will be made available by JOINclusion members to the schools/teachers participating in the pilots (at least in the first piloting phase, potentially also downloadable for the second piloting phase). To comply with privacy rights, no

personal or interaction data will be stored on the devices. Therefore, to keep track of the student's interactions, **a connection to the internet** will be required. The data will be sent to a private server located at Maastricht University premises. Once received, the data will be encrypted and safely stored. In that regard, a **consent form** (see Appendixes) will be delivered to the participants AND their parent(s) or caregiver(s). Schools/teachers will also receive a different consent form. As stated in the aforementioned document:

*In none of the cases, the personal details of the student (name, education centre, group, etc.) will be provided within the survey. To track sessions, we will randomly generate just an ID number. The correspondence between an ID number and personal details will not be accessible to the researchers at any moment. Similarly, to ensure the participant's privacy, only the relevant school will have access to this correspondence while any school member will have access to the data collected. Therefore, the information that we collect about your represented person will be pseudonymized. This means that you will not be directly personally identifiable. We will not share the information collected about your represented person with any third party.*

In the first phase, the internet connection will only be required to send the data from the devices to the private server mentioned above while in the second phase where the educators will be able to create their own scenarios, the internet connection will be required for the students to have access to them.

The creation of scenarios by the educators will be possible via a web application. The application will require an internet connection and the data of the scenarios will, initially, be stored in the private server at Maastricht University. The students and/or teachers will be able to access these scenarios from the application on their devices. In order to pick a scenario some form of code will be required that will be set by the educators.

In the application, there will also be a multiplayer/collaboration component which will also require an internet connection and it will be delivered in the second phase. The students will "collaborate in pairs" via their devices and the updates between their devices will be served from the server at UM in real-time.

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# Sitography

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# Apendixes

## Consent form (initial draft)

**English**

### Declaration of Consent

for participation in the research study:

JOINclusion

**Executive investigator(s):**
**Name:** Enrique Hortal Quesada
**Institution:** Maastricht University, the Netherlands
Email: enrique.hortal@maastrichtuniversity.nl

**Protection officer:**
**Name:** Ton Derix
**Institution:** Maastricht University, the Netherlands
Email: ton.derix@maastrichtuniversity.nl

### STUDENT VERSION

**Project description: What is JOINclusion?**
JOINclusion is a project developing a serious mobile game to teach primary school students about empathy. The game simulates daily situations and analyzes how kids react to conflicts related to the social inclusion of peers with migrant background.

**Objectives of the project: What is JOINclusion intended to?**
The main objective of the project is to find better ways to integrate everyone in your classroom and to help you interact with your classmates.

**Responsibilities of the participants: Why should I participate?**
While playing the game, you will interact, alone or with other colleagues, with a mobile game. In this game, you will have the freedom to take decisions that will affect the development of a daily situation. Depending on the session, you may be the person affected by a discriminative situation, a participant in it or an observer. During the game, your decisions will be recorded. Additionally, you will answer some questions before and after the game. **Your answers and interactions will be kept completely confidential.**

**Participation in the study: What will I do?**
Depending on your teacher's organization, you will play the game several times. Each time, it will take around 15 (fifteen) minutes, including some questions before and after it.

**Rights of the participant**
The mobile game will not collect data from the sensors available in the device but only information about the interactions with the serious game (i.e. options selected/actions performed while playing). Your **participation in this research is voluntary**. You have the **right to withdraw** (abandon or stop) at any point during the study (even during a concrete session), for any reason, and without any prejudice. If you would like to contact the executive researcher(s) in the study to discuss this research, please e-mail Enrique Hortal, at enrique.hortal@maastrichtuniversity.nl.
Your participation (parent/caregivers) and the participation of your represented (primary school student) will not be compensated financially.

1

English

## PARENTS/CAREGIVERS VERSION

**Project description: What is JOINclusion?**
JOINclusion is a 32-moths project funded by the European Commission (Erasmus+ program). In this project, we are developing a serious mobile game intended to train soft skills (empathy) in kids from 9 to 11 years old. The application is designed to simulate daily situations and analyze how kids react to conflicts related to the social inclusion of peers with a migrant background.

**Objectives of the project: What is JOINclusion intended to?**
The main objective of the project is to find better ways to encourage social inclusion in European classrooms and to promote interaction and dialogue between participants (primary school students).

**Responsibilities of the participants: Why should I participate?**
While playing the game, you will interact, alone or with other colleagues, with a mobile game. In this game, you will have the freedom to take decisions that will affect the development of a daily situation. This scenario will include some kind of social discrimination and you will deal with it from different roles. Depending on the session, you may be the person affected by the discriminative situation, a participant in it or an observer. During the game, your decisions will be recorded for further analysis. Additionally, pre and post-game questionnaires will be delivered via the game. These questionnaires are intended to understand the context of the interaction. **Please be assured that your responses for the questionnaires and interactions during the game will be kept completely confidential.**

**Participation in the study: What will I do?**
The study involves filling out two questionnaires and interacting with a mobile application. Each session should take around 15 (fifteen) minutes. Depending on the school/teacher's curriculum and student availability and willingness, each student would participate in several sessions. Ideally, you may play the game around 4-5 times.

**Rights of the participant**
The abovementioned mobile application will not collect data from the sensors available in the device but only information about the interactions with the serious game (i.e. options selected/actions performed while playing). Your **participation in this research is voluntary**. You have the **right to withdraw** (abandon) at any point during the study (even during a concrete session), for any reason, and without any prejudice. If you would like to contact the executive researcher(s) in the study to discuss this research, please e-mail Enrique Hortal, at enrique.hortal@maastrichtuniversity.nl.
Your participation (parent/caregivers) and the participation of your represented (primary school student) will not be compensated financially.

**Disclamer: How we care about your privacy**
In none of the cases, the personal details of the student (name, education centre, group, etc.) will be provided within the survey. To track sessions, we will randomly generate just an ID number. The correspondence between an ID number and personal details will not be accessible to the researchers at any moment. Similarly, to ensure the participant's privacy, only the relevant school will have access to this correspondence while any school member will have access to the data collected. Therefore, the information that we collect about your represented person will be pseudonymized. This means that you will not be directly personally identifiable. We will not share the information collected about your represented person with any third party.

You have the right to access all the information collected about you as part of the study. This is the only case when UM's researcher may receive the relevant ID number and student name correspondence. Upon request, we will send you the information collected about you. After the study will have been completed, the outcome of our research will be presented in a written report to the Erasmus+ commission for its evaluation and potentially at a scientific journal or a conference that the staff of Maastricht University will attend. The information collected about you in the format of a questionnaire and interactions with the serious game will have all been destroyed after 10 years after the last publication

## English

☐ I have been informed of the study. I have read the written information. I have had the opportunity to ask questions about the study. I have been able to think about my participation in the study being completely voluntary. I have the right to withdraw my consent and quit the study at any time without needing to give a reason.

☐ I agree to participate in the study:

Name of the participant:

Birth date[1]:

Signature: Date:

☐ I give my (legally required) permission for my child to participate in the research.

☐ I have been informed of the study. I have read the written information. I have had the opportunity to ask questions about the study. I have been able to think about the participation of my represented person in the study being completely voluntary. I and my represented person have the right to withdraw this consent and quit the study at any time without needing to give a reason.

☐ I agree to participate in the study:

Name of the parent/caregiver:

Signature: Date:

With the support of the Erasmus+ Programme of the European Union

[1] This study will be conducted with participants who are younger than 18 years old.

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