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Development and Initial Validation of the Life Skills Scale for Sport – Transfer Scale (LSSS-TS)

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Abstract

Objectives: The aim of this research was to develop and provide initial validity and reliability evidence for a scale that assesses life skills transfer from sport.

Method: Two studies were conducted to develop the Life Skills Scale for Sport – Transfer Scale (LSSS-TS). Study 1 involved a review of the literature investigating life skills transfer and resulted in the development of 88 initial items representing six key transfer areas: school/ education, home/ family, community, social settings, employment, and other life domains. During this study, the content validity of the items was endorsed by 10 experts and a pilot study conducted with 72 participants provided further validity evidence for the scale and an assessment of its use in practice. Study 2 included 321 youth sport participants and refined the scale further using the results of factor analysis and descriptive statistics.

Results: Study 1 resulted in the development of the initial 64-item LSSS-TS and provided content validity evidence for all items. Study 2 led to the refinement of the scale to 40-items and supported the factor structure and internal consistency reliability of the scale.

Conclusions: Collectively, these studies provided initial evidence for the validity and reliability of the LSSS-TS; a measure which can be used by researchers and practitioners to assess participants' perceived life skills transfer from sport to other domains.

Keywords: positive youth development; psychosocial development; psychosocial assets; youth sport; transfer of learning

Positive youth development (PYD) through sport is an approach to research and practice that aims to investigate how sport can be used to promote developmental outcomes in young people. Holt, Deal, and Smyth (2016) described PYD through sport as:

> "intended to facilitate youth development via experiences and processes that enable participants in adult-supervised programs to gain transferable personal and social life skills, along with physical competencies. These skills and competency outcomes enable participants in youth sport programs to thrive and contribute to their communities, both now and in the future" (p. 231).

Furlong (2013, p. 3) defined youth as "a period of semi-dependence that falls between the full dependency that characterizes childhood and the independence of adulthood". This period begins around 11-years of age and continues for approximately 10 years to the age of 21 (Papalia, Olds, & Feldman, 2006). Key developmental outcomes of the PYD approach include enhancing young people's psychological well-being and developing their life skills (Jones, Dunn, Holt, Sullivan, & Bloom, 2011; Holt 2016). Both psychological well-being and life skills are important for preparing youth for the life challenges they presently face and will encounter in the future (Coleman, 2011; Holt, 2016).

Life skills have received a great deal of research attention and are described as a series of transferable skills required by all people to help them succeed in everyday life (Jones & Lavellee, 2009; Holt, Deal, & Pankow, 2020). Examples of such skills include interpersonal communication, goal setting, leadership, and problem solving. As explained by Cope, Bailey, Parnell, and Nicholls (2016), a skill is something which can be learned, is an action with an outcome in mind, and can be practiced and developed over time. Furthermore, key to the definition of a 'life' skill is that the skill can be transferred to another area of a persons' life (e.g., at home, in school, or in their community). Developing such life skills

helps adolescents grow healthily and aids their transition through life, allowing for their success in education, future employment, and promoting their health (Steptoe & Wardle, 2017; World Health Organisation, 1999).

Over the last two decades it has become apparent that life skills can be developed in appropriately organised extracurricular activities such as drama, music, physical education, and sport (Holt et al., 2017; Larson, 2000; Opstoel et al., 2019). Of these extracurricular activities, sport has been highlighted as a good setting to develop young peoples' life skills due to its emotional, social, competitive, and interactive nature, along with its popularity (Cronin & Allen, 2017). Organised sport is broadly defined as "physical activity that is directed by adult or youth leaders and involves rules and formal practice and competition" (Logan & Cuff, 2019, p. 1). As highlighted in a review conducted by Johnston, Harwood, and Minniti (2013), there are a range of different life skills that young people develop through sport. The most commonly cited life skills from this review,, and therefore what could be considered as key life skills developed through sport, include teamwork, social skills, time management, goal setting, problem solving and decision making, interpersonal communication, leadership, and emotional skills. These specific life skills have been previously assessed using the Life Skills Scale for Sport (LSSS; Cronin & Allen, 2017).

Along with assessing the extent to which young people develop life skills through sport, researchers have studied how exactly these life skills are developed and the key influencers driving this development. To begin with, Holt et al. (2017) described how life skills development can be fostered through implicit and explicit processes. Originally discussed by Turnnidge, Côté, and Hancock (2014), the implicit process involves young people having positive experiences in the PYD climate (e.g., relationships with their coaches, peers, or parents), whereas the explicit process involves activities being purposely structured to teach life skills (e.g., a program with a life skills focus). Previous youth sport research has

highlighted how the coaching climate impacts the life skills development of athletes (e.g., Cronin & Allen, 2015; Gould, Flett, & Lauer, 2012; Vella, Oades, & Crowe, 2012). Other researchers have highlighted how peer relationships can help promote life skills development through sport (e.g., Fraser-Thomas & Côté, 2009; Strachan & Davies, 2015). Some studies have also highlighted positive associations between parental behaviours and participants' life skills development through sport (e.g., Mossman & Cronin, 2018), although research investigating parents has received less attention. Finally, numerous sport programs which are intentionally structured to teach life skills, such as The First Tee (Weiss, 2008), Sport United to Promote Education and Recreation (SUPER; Danish, 2002), Project SCORE (Strachan, MacDonald, & Côté, 2016), and TRY-sport (Holt et al., 2013) have resulted in the participants' development of life skills including goal setting, confidence, teamwork, communication, and leadership.

Along with promoting the learning of life skills in sport, youth sport researchers and practitioners are interested in the transfer of life skills to other domains. In essence, for a skill developed in sport to be truly considered a life skill, it must be successfully transferred and applied away from the sporting domain in which it was learned (Holt et al., 2016; Pierce, Gould, & Camiré, 2017). This process of life skills transfer has been defined by Pierce et al. (2017) as:

> "the ongoing process by which an individual further develops or learns and internalises a personal asset (i.e., psychosocial skill, knowledge, disposition, identity construction, or transformation) in sport and then experiences personal change through the application of the asset in one or more life domains beyond the context where it was originally learned" (p. 194).

Just like developing life skills, the process of transferring these skills from sport to non-sporting domains (e.g., home or school) is an ongoing process which is developed over time

(Pierce et al., 2017). Bean, Kramers, Forneris, and Camiré (2018) explained this idea in their continuum of life skills development and transfer which includes an implicit/explicit continuum involving six key levels: 1) structuring the sport context (e.g., designing a program and setting rules), 2) facilitating a positive climate (e.g., modelling positive behaviours and fostering positive relationships), 3) discussing life skills (e.g., defining life skills and discussing their importance), 4) practicing life skills (e.g., creating opportunities to practice and providing time to reflect), 5) discussing transfer (e.g., talking about the importance of transfer and making athletes aware of transfer opportunities), and 6) practicing transfer (e.g., making links with parents, teachers, and members of the community and giving opportunities to transfer life skills). Within lower levels of the continuum (e.g., levels 1 and 2) a more implicit approach is involved; whereas, as we move up the continuum (e.g., levels 3, 4, 5, and 6) the approach becomes more explicit.

Given that transfer is a key aspect of life skills development through sport, it is somewhat surprising that there has been little focus or limited evidence of the transfer process occurring (Holt at el., 2017; Jacobs & Wright, 2019; Pierce, Erickson, & Dinu, 2019). In their review study, Holt et al. (2017) highlighted the importance of transferring PYD through sport outcomes to other domains. However, this study found that transfer was reported in only 17 of the 63 qualitative studies analysed. Specifically, these studies simply referenced coaches having discussions with their athletes regarding the importance of transfer (e.g., Chinkov & Holt, 2016; Goudas & Giannoudis, 2010), as opposed to assessing if athletes had actually transferred life skills to other domains. As explained by several researchers (e.g., Jacobs & Wright, 2019; Kendellen & Camire, 2020), many life skills transfer studies have been qualitative in nature and involved one-shot interview designs. In such studies, athletes, coaches, and/or parents have discussed how athletes transfer life skills learned in sport to other life domains without any follow-up assessment. So, whilst transfer is important and

regularly discussed in the qualitative literature, there is value in using quantitative approaches to further examine and/or compliment such approaches in understanding life skills transfer from sport to other life domains.

In particular, the measurement of transfer is a key issue for researchers interested in assessing the transfer of life skills from sport to other life domains. Currently, there is only one quantitative measure to assess participants' perceptions of life skills transfer from sport. The Life Skills Transfer Survey (LSTS; Weiss, Bolter, & Kipp, 2014) has some evidence for its validity and reliability and is a measure developed to assess life skills learned in golf and transferred to domains away from the sport. Created to assess The First Tee program (Weiss, 2008), the LSTS measures the life skills of meeting and greeting, managing emotions, goal setting, resolving conflicts, making healthy choices, appreciating diversity, getting help from others, and helping others. The development of the LSTS was a step forward for the research literature and academics could consider using the LSTS in their own research. Nonetheless, as outlined by Wright, Richards, Jacobs, and Hemphill (2019), the LSTS only aligns with the life skills promoted within The First Tee program which is specific to golf. As such, this makes it difficult to utilise the LSTS in a wide variety of sports and may be the reason the scale has not been used more frequently. More recently, Camiré et al.'s (2021) Coaching Life Skills in Sport Questionnaire (CLSS-Q) has been developed to assess the extent to which coaches are intentionally teaching life skills through sport. Whilst this new questionnaire includes a transfer subscale, it only assesses the perceptions of youth sport coaches.

Given the limitations of the two measures outlined above, it is important to create a measure which can assess how key life skills participants develop through a various sports transfer to non-sporting domains. In particular, this new measure would allow researchers and practitioners to quantitatively assess whether young people are transferring life skills from sport to other life domains. The survey could also be used as a tool to inform coaches of the

areas to emphasise away from sport where athletes may transfer their life skills (Bean et al., 2018). For example, if a session has a goal setting focus, coaches can highlight how to transfer these goal setting skills to areas such as schoolwork. Additionally, the effectiveness of life skills through sport programs such as Sports United to Promote Education and Recreation (SUPER; Danish, 2002), the Transfer-Ability Programme (TAP; Allen, Rhind, & Koshy, 2015), and Project SCORE (Strachan et al., 2016) – which are designed to teach life skills and contribute to young peoples' lives away from sport – could be measured more effectively via a valid and reliable life skills transfer scale. Finally, future intervention studies or programs which focus on the eight life skills measured by the LSSS (Cronin & Allen, 2017) could be further investigated using a specific measure of life skills transfer.

Overall, the purpose of the current research was to conduct two studies to develop and validate a measure of life skills transfer that assesses if youth sport participants transfer the eight key life skills developed through sport to other domains. In accordance with previous research (e.g., Cronin & Allen, 2017), this survey was developed for youth sport participants aged 11–21 years. The purpose of study 1 was to initially develop the scale and provide evidence for the content validity of items. The purpose of study 2 was to further refine the scale using the results of factor analysis and descriptive statistics. Overall, the provision of such evidence is a necessary step when developing a scale for use in sport psychology research (Gunnell et al., 2014).

Study 1 – Initial Development of the Scale

The aim of study 1 was to develop a pool of items designed to represent domains away from sport where life skills are transferred. This involved determining the key transfer areas within the research literature and developing items to assess life skills transfer to these domains. In order to keep a consistent approach, the method for scale development used for the LSSS (see Cronin & Allen, 2017) was also used in the current study. Specifically, we

followed the processes to develop a good quality scale as recommended by DeVellis (2011). After developing the initial item pool, a content validity check was conducted using content experts to provide evidence for the content validity of items. Following on from this, a pilot study with a sample of sports participants was conducted to obtain feedback on the content, structure, length and practicality of the individual items and complete scale. Based on experts' ratings and the pilot study, items were selected for the initial version of the scale. A thorough approach to developing the scale was deemed important, as it has been highlighted that content validity is an area which has been overlooked when developing measures in sport psychology (Gunnell et al., 2014).

Method and Results

Original Life Skills Scale for Sport. The LSSS is a measure (Cronin & Allen, 2017, 2018; Mossman & Cronin, 2018) that assesses eight key life skills (teamwork, social skills, goal setting, leadership, problem solving and decision making, interpersonal communication, emotional skills, and time management) that participants perceive they develop through sport. The Life Skills Scale for Sport – Transfer Survey (LSSS-TS) is designed to build onto this scale to assess whether participants perceive they transfer these eight key life skills to other life domains. For example, after answering questions on whether they learn teamwork skills through sport, participants would then be asked if they transfer these teamwork skills to other life domains.

Selecting areas of transfer and developing items. An extensive review of the life skills transfer literature was conducted to identify the domains away from sport where life skills are potentially transferred. A university search engine which searches across all the major search engines (e.g., psycARTICLES, psycINFO, and SPORTDiscus) was used to locate relevant journal articles. A range of search terms were used to find articles which discussed life skills transfer. Search terms were kept simple and included "life skill*" and/or

"transfer" and/or "sport" and the year range was not specified so we could include all relevant articles. After the initial search, an abstract screening was conducted and articles which could not be completely ruled out at this point were kept for further screening. Full text articles were obtained and the lead author searched each article for the word "transfer" and highlighted sentences containing potential areas for transfer. In total, 30 articles which contained content relating to life skills transfer were analysed. An analysis of the content from these articles revealed a wide variety of life skills transfer domains: school/ classroom (*n* = 20), home (*n* = 11), community (*n* = 8), employment (*n* = 8), family (*n* = 7), other everyday situations (*n* = 6), social relationships (*n* = 3), further education (*n* = 2), dealing with injury (*n* = 1), health (*n* = 1), later life (*n* = 1), studying/ homework (*n* = 1), other extracurricular activates (*n* = 1), and general reference to transfer (*n* = 8). After reviewing these domains, it was decided that some domains could be combined to create one particular domain. For example, school/ classroom and further education were combined into one domain titled 'school/ education'. After this process, six key domains were decided upon for initial review: school/ education, home/ family, community, social settings, employment, and a general domain called 'other life domains.' For the initial LSSS-TS, we created two items per domain with the exception of employment. Employment only had one item as a good deal of participants aged 11-21 years of age would not be in employment.

To develop items, the same process utilised for the original LSSS was used (see Cronin & Allen, 2017). To begin with, it was deemed important to keep the items simple and consistent with items from the LSSS to create a reasonable flow to the scale. This was also true of deciding upon the item stem. Where the original LSSS used the stem "This sport has taught me to…" we decided to use the stem "I use these teamwork skills…" for the transfer items relating to the particular life skill. Again, in order to keep a consistent flow to the scale, it was decided to keep the same response scale as the LSSS with responses being: not at all

(1), a little (2), some (3), a lot (4), and very much (5). Overall, this process resulted in the first LSSS-TS (see Appendix A of the supplementary materials) having a total of 88 items with 11 items per life skill.

Providing content validity evidence. Content validity is a process which involves the use of content experts to assess whether items relate to a specific construct (Haynes, Richard, & Kubany, 1995). To assess content validity evidence, 18 potential reviewers with expertise in PYD through sport and life skills development through sport were contacted. To be considered experts, reviewers must have published a minimum of three research papers on PYD through sport or life skills development through sport. In total, 10 reviewers participated in the item review process which was conducted via an online survey. The reviewers consisted of five males and five females with the following professional roles: professor emeritus (n = 1), professor (n = 3), associate/assistant professor (n = 4), senior lecturer (n = 1), and PhD candidate (n = 1). The reviewers were from Canada (n = 5), USA (n = 3), Australia (n = 1), and Greece (n = 1).

Within the online survey, reviewers were told the purpose of the item review process (e.g., to develop an add-on to the LSSS which assesses life skills transfer) and provided with both the definition of life skills transfer and the six potential transfer domains. In line with the advice of several researchers (e.g., Lynn, 1986; Polit & Beck, 2006), reviewers were asked to rate each item from 1 (*not relevant*) to 4 (*highly relevant*) on its ability to measure life skills transfer. Next, reviewers were asked to select which of the six domains the item related to (e.g., education, employment, home/family, community, social settings, or general). Finally, each reviewer was asked to provide any additional comments on each item (e.g., item wording, suitability as a transfer domain, relates more to another construct, any other feasible areas of transfer for this life skill, etc.).

Once the 10 reviewers had completed the online survey and given their feedback, content validity was calculated using the content validity index (CVI; Lynn, 1986). The CVI is a scoring system which computes the ratings of item relevance based on the scores given by content experts. Two types of CVI are considered important when developing a scale (Polit & Beck, 2006): the content validity index for items (I-CVI) which assesses expert ratings for individual items and the content validity index for the scale (S-CVI) which provides the content validity of the overall scale. I-CVI ratings for each item on the initial 88-item scale ranged from .40 to 1.0, although when each item is averaged across the eight life skills combined (e.g., for each parallel worded item across the eight life skills), the I-CVI ratings ranged from .58 to .96 (see Table A of the supplementary materials). It can be seen from these scores that the general items were not as well rated as the items pertaining to specific transfer domains. Next, the S-CVI was calculated by computing the average I-CVI scores across all items. This approach, termed S-CVI/Ave, was taken as opposed to the S-CVI/UA (universal agreement) due to the higher number of content experts taking part in the content validity process (Polit & Beck, 2006). The S-CVI/Ave score for the 88-item scale was .76 which falls slightly below the .80 recommended by Polit, Beck, and Owen (2007).

In their feedback, the expert reviewers provided support for the items generated and scored items favourably when assigning each item to its relevant domain. However, some common negative feedback was obtained for the general items which reviewers frequently felt were “too vague” or “somewhat abstract”. These comments were particularly common on the item “in other everyday situations”.

Pilot study. In order to further assess the appropriateness of LSSS-TS items, the level of variability of item responses, and to determine how long the survey would take to complete, a pilot study was conducted with 72 sports participants (*M*age = 21.10, *SD* = 3.18, age range = 18–33 years). These participants were recruited from undergraduate and

postgraduate degree courses in sports science, sports coaching, and sports rehabilitation at the main author's institution and represented a variety of different sports including soccer (n = 35), rugby (n = 10), netball (n = 7), basketball (n = 4), and boxing (n = 4). Participants were asked to complete the 88-item LSSS-TS in its entirety and were instructed to provide comments on the length of the survey, the item wording/clarity, and if they considered any more transfer areas as important additions to the scale.

Positive comments frequently provided by participants were that the survey was easy to understand, the instructions were clear, and items were worded well. For all items of the 88-item LSSS-TS, participants used the entire 1–5 response scale. Participants also indicated that they had no other areas of transfer that they would recommend. Mean scores for the 88 items ranged from 2.56 to 3.87 (average M = 3.19). These scores indicate responses close to the midpoint values for each item and demonstrate participants were not simply responding to the endpoints of the response scale and simply agreeing or disagreeing with the item (Clark & Watson, 1995). The standard deviation of the 88 transfer items ranged from .84 to 1.07, showing that items would ensure a good level of variability amongst responses. Finally, skewness values ranged from -.80 to .52 and kurtosis values ranged from -1.13 to .98, indicating reasonable normality (Tabachnick & Fidell, 2013). One negative comment frequently mentioned by participants was that the survey was too lengthy (i.e., it took 20-25 minutes to complete) and was somewhat repetitive.

After reviewing the information obtained from the pilot study (in particular, the feedback on the length of the survey), the decision was taken to reduce the number of items in the scale. By reducing the number of items, the scale would be less repetitive and take participants less time to complete. Reducing the number of items involved selecting the items from each transfer area with the lowest I-CVI scores from the content validity experts (see Table A of the supplementary materials) and resulted in the removal of one school/ education

("within my academic studies"), one community ("When engaging with other people in my community"), and one general item ("In other everyday situations") for each subscale (see Appendix A of the supplementary materials). Once these three items were removed from the scale, the S-CVI/Ave score increased to .80 which is the threshold of acceptability. At this point it was deemed appropriate to continue with two home/ family and two social settings items as the scores from study 1 made it difficult to distinguish which item was better. Overall, the removal of items resulted in a revised 64-item LSSS-TS (see Appendix A of the supplementary materials). Given that a limitation of our pilot study was the inclusion of only older youth sport participants, an important aspect of our next study was to test the 64-item scale with a younger cohort of youth sport participants.

Study 2 – CFA and Bifactor Analysis

The aim of study 2 was to further revise the LSSS-TS and reduce the number of items in the scale. At this point, we aimed to reduce the scale to one item per transfer area for each life skill. Initially, the general item was retained for further analysis as it had produced a low I-CVI score from study 1. During this process, a decision needed to be made on which of the two social settings items and two home/ family items to retain. To start with, the factorial validity of the 64-item scale was tested. Results of this testing (i.e., model fit and factor loadings) were used to help refine the scale. The descriptive statistics for each item were also analysed so each item could be assessed carefully. As with study 1, mean scores around the midpoint of the scale, responses across the complete response scale, a good level of variability, and normality in terms of skewness and kurtosis were sought. After the scale refinement process, the factorial validity and internal consistency reliability of the refined scale was assessed. Finally, the convergent validity of the scale was assessed by investigating if a life skill had its highest correlation with its follow-on transfer scale. For example, it was hypothesised that the life skill of teamwork would have its largest

correlation with the teamwork transfer scale. This aligned with the idea that convergent validity involves evidence of similarity between measures of theoretically related constructs (DeVellis, 2011).

Method

Participants

The sample included 321 youth sports participants (*M*age = 14.20, *SD* = 1.07, age range = 12–17 years). The main sports represented in the sample were soccer (*n* = 134), netball (*n* = 47), dance (*n* = 22), tennis (*n* = 12), lacrosse (*n* = 9), and field hockey (*n* = 9). In total, 89 respondents participated in 19 other sports (e.g., swimming, golf, athletics, etc.). The sample had slightly more males (*n* = 166) than females (*n* = 155), with participants having an average of 5.50 years (*SD* = 3.28) playing experience. Participants played their sport for an average of 3.96 hours per week (*SD* = 2.77).

Measures

Life skills. Perceived life skills development was measured using the LSSS (Cronin & Allen, 2017). This 43-item scale allows participants to rate the extent to which they develop eight life skills through playing sports. The life skills include teamwork (7 items; e.g., "work well within a team/group"), goal setting (7 items; e.g., "set challenging goals"), time management (4 items; e.g., "manage my time well"), emotional skills (4 items; e.g., "use my emotions to stay focused"), interpersonal communication (4 items; e.g., "speak clearly to others"), social skills (5 items; e.g., "get involved in group activities"), leadership (8 items; e.g., "organise team/group members to work together"), and problem solving and decision making (4 items; e.g., "think carefully about a problem"). Participants respond to items on a scale ranging from 1 (*not at all*) to 5 (*very much*). Past research has evidenced the validity and reliability of this scale with sports participants (Cronin & Allen, 2017, 2018; Mossman & Cronin, 2018). Like the Cronin and Allen (2017) study, when tested via bifactor exploratory

structural equation modelling (B-ESEM), the LSSS displayed adequate model fit (χ^2/df = 2.10, RMSEA = .06, CLI = .93, TLI = .89) with all items loading significantly (p values < .001) onto their specific life skills factor and the total life skills factor. Two types of internal consistency reliability (Cronbach's alpha and McDonald's omega) were calculated for the LSSS subscales, with values ranging from .84 to .92.

Life skills transfer. The 64-item LSSS-TS developed in Study 1 was used to measure the extent to which youth sport participants perceived they were transferring eight different life skills developed through sport to five different domains away from sport. The item stem for the transfer subscales is "I use these teamwork skills…" and example items include social settings (e.g., "when interacting with friends"), education (e.g., "in school/ education"), home life (e.g., "at home"), in the community (e.g., "within my community"), employment (e.g., "in my job/ when doing chores"), and a general life skills domain (e.g., "in other areas of my life"). Participants respond to items on a scale ranging from 1 (*not at all*) to 5 (*very much*).

Procedures

After approval was granted from the university's ethics committee, a convenience sample of participants was recruited by contacting approximately 60 head coaches from local sports clubs and physical education (PE) teachers from local schools. Initial contact was made with these head coaches and PE teachers via email before face-to-face meetings were arranged and permission was granted to survey seven sports clubs and schools. Before the data collection took place, participants were informed by their coach/teacher that they would be invited to participate in a research study the following week. Only participants who competed in organised youth sports were asked to take part in the study. With only the lead researcher in attendance, surveys were completed at the sports clubs/schools before the start of the participants' coaching session or PE lesson and

participants were instructed not to discuss their answers with each other. Before completing the scale, informed consent was acquired from either the youth sport participant or their parent or guardian (if under 16 years of age). The researcher gave an introductory statement which explained the purpose of the study, that there were no right or wrong answers, and that all information provided would remain confidential. The paper and pencil survey took around 15-20 minutes to complete.

Data Analyses

Preliminary data analyses, descriptive statistics, correlations, and multivariate analysis of variance (MANOVA) were all conducted using SPSS 25.0 (IBM Corporation, 2017), whilst McDonald's omega was calculated using JASP (2020). To assess the factorial validity of the scale, confirmatory factor analysis (CFA), bifactor CFA (B-CFA), exploratory structural equation modeling (ESEM), and bifactor-ESEM (B-ESEM) employing maximum likelihood estimation were conducted using Mplus (Version 7.4; Muthén & Muthén, 1998–2015). In particular, the following four models were tested: 1) an eight factor CFA model with one factor for each of the eight life skills, 2) a bifactor CFA model that included one factor for each life skill and one general life skills transfer factor, 3) an ESEM model which allowed all items to load onto their intended factor and to cross-load onto all other factors, and 4) a B-ESEM model which allowed items to load onto their intended factor, to cross-load onto all other factors, and to load onto one general life skills transfer factor. Additionally, to account for the use of parallel worded items across the eight subscales, items were allowed to load onto their requisite transfer domain (e.g., school/education items were allowed to load onto a school/education factor). Overall, the aim of the analyses was to assess the fit of the models tested and the factor loadings of individual items. The following fit indices were used to assess model fit: chi-square statistic divided by degrees of freedom (χ^2/df), Root Mean Square Error of Approximation (RMSEA), Comparative Fit Index (CFI), and the Tucker

Lewis Index (TLI). A χ^2/df of less than 3.0 was indicative of adequate fit (Tabachnick & Fidell, 2013). In line with Marsh, Hau, and Wen's (2004) recommendation, an RMSEA value of less than .08 or .05 represented a reasonable or close fit to the data respectively; whereas, CFI and TLI values greater than .90 or .95 indicated acceptable and excellent fit respectively. Lower values for the Akaike Information Criteria (AIC), Bayesian Information Criterion (BIC), and sample size adjusted BIC (ABIC) are also indicative of better model fit (Appleton et al., 2016). Factor loadings were judged according to if they loaded significantly onto their specified factor and the magnitude of the factor loading. To assess the internal consistency reliability of the LSSS-TS subscales, Cronbach's alpha and McDonald's omega coefficients were calculated. According to Nunnally and Bernstein (1994), reliability values above .70 indicate acceptable internal consistency reliability. Descriptive statistics (i.e., mean score, standard deviation, range, skewness, and kurtosis) were calculated for each of the life skills transfer items. Finally, Pearson's correlation coefficients were used to assess the relationships between participants perceived life skills development and participants perceived life skills transfer. For example, we anticipated that the teamwork subscale of the LSSS would have its largest correlation coefficient with the teamwork transfer subscale of the LSSS-TS. A *p* value of less than .05 was required to indicate a statistically significant relationship between variables and correlations were judged as small (r = ± .10 to ± .29), medium (r = ± .30 to ± .49), or large (r > ± .50) based on the Cohen's criteria (1988).

Results

Preliminary Analyses

Due to the wide age range, a MANOVA was conducted to test for any age group differences between younger (12–14 year olds) and older (15–17 year olds) participants on the main study variables. This aligned with Camiré, Truelet al.'s (2012) idea that younger participants may not possess the cognitive capabilities to be aware that life skills learned in

sport can be transferred to other areas of life. Nonetheless, the results revealed there were no statistically significant differences between the age groups for the study variables, F (8, 312) = 3.52, Wilk's $\lambda = .99$, $p = .89$. As such, no further follow-up tests were conducted.

64-Item Models

Table 1 shows the fit indices and information criteria for and the models tested. The four models tested displayed mixed results for fit. The χ^2/df and RMSEA scores for the four models were acceptable; however, the CFI and/or TLI values were marginally below the recommended fit criteria (Marsh et al., 2004). Table B (see supplementary materials) contains the factor loadings for the eight-factor CFA and B-CFA models. The average factor loading on the eight-factor CFA model was .77 (range = .61–.86, all p values < .001). Within the bifactor model, all 64 items loaded significantly ($p < .001$) onto the general life skills transfer factor with an average factor loading of .66 (range .51–.78). This indicates that all eight transfer subscales of the LSSS-TS may be combined to calculate an overall life skill transfer score. Additionally, all 64 items loaded significantly ($p < .001$) onto their specific life skills transfer factor with an average factor loading of .40 (range .20–.58). An examination of the ESEM parameter estimates (see Table C of the supplementary materials) revealed well defined factors for the eight life skills. With the exception of one problem solving and decision making item (factor loading = .35, p = .09), all items loaded significantly onto their intended factor with an average factor loading of .61 (range = .24–.86). Although there were several significant cross-loadings in the model, they were lower than the primary factor loadings in all cases. Within the B-ESEM model (see Table D of the supplementary materials), all 64 items loaded significantly ($p < .001$) onto the general life skills transfer factor with an average factor loading of .66 (range .50–.79). Additionally, with the exception of one social skills item (factor loading = .09, $p = .23$), all items loaded significantly onto their specific life skills transfer factor with an average factor loading of

.40 (range .09–.62). Again, although there were several significant cross-loadings in this model, they were lower than the primary factor loadings in all cases.

Table E (see supplementary materials) displays the mean score, standard deviation, minimum and maximum values, skewness, and kurtosis for each of the 64 transfer items in the LSSS-TS. Mean scores of the 64-items ranged from 2.65 to 3.55. These scores show that respondents were close to the midpoint of the response scale and not merely agreeing or disagreeing with the item (Clark & Watson, 1995). The standard deviation of the 64 transfer items ranged from 1.01 to 1.19. This shows that the items would ensure a level of variability amongst responses, which would allow the survey to distinguish between high and low responders. Finally, skewness values ranged from -.38 to .25 and kurtosis values ranged from -.83 to -.27, indicating reasonable normality (Tabachnick & Fidell, 2013). As these results were quite similar for all items in the scale, these descriptive statistics were not used in the decision process of which items to remove from the scale.

To refine the LSSS-TS to 40-items, we instead looked to the FLs for all four models to decide on which items to remove. Based on lower average factor loadings (see Tables B, C, and D of the supplementary materials), one social settings item (item 1; “when interacting with friends”; average FL = .65) and one home/ family item (item 6; “with my family”; average FL = .71) were removed from each transfer subscale of the LSSS-TS. At this stage, the general item (item 8; “in other areas of my life”) was also eliminated from each subscale to help reduce the length of the scale and given that expert reviewers in Study 1 provided negative comments pertaining to general items. This resulted in a refined 40-item LSSS-TS which had only one item per transfer area for each of the eight key life skills.

40-Item Model

The fit indices and information criteria for the four models examined can be seen in Table 1 and the factor loadings for the models are included in Tables F, G, and H (see

supplementary materials). As outlined in Table 1, the four models tested displayed good fit across all four fit indices. Additionally, within the CFA, B-CFA, and ESEM models, all items loaded significantly onto their specific life skills transfer factor and general life skills transfer factor in the case of the B-CFA model. However, when comparing models across the fit indices and information criteria, the B-ESEM model provided the best fit. With the B-ESEM model (see Table G of the supplementary materials), all items loaded significantly ($p < .001$) onto the general life skills factor (*M* factor loading = .66, range = .54–.74). This indicates that all transfer subscales of the LSSS-TS may be combined to calculate an overall life skills transfer score. In the B-ESEM model, all 40-items also loaded significantly ($p < .001$) onto their specific life skills transfer factor with an average factor loading of .40 (range = .22–.76). Although there were several significant cross-loadings, they were lower than the primary factor loadings in all cases. In this regard, it is important to note that cross-loadings are often seen in B-ESEM models (e.g., Fadda, Scalas, Meleddu, & Morin, 2017; Morin, Arens, & Marsh, 2016) due to the more flexible statistical approach being used (i.e., items are free to load onto multiple factors) and the fact that items are never a 'pure' indicator of a construct (Morins et al., 2016).

Table 2 presents the correlations, scale ranges, means, standard deviations, reliability estimates, and skewness/kurtosis values for all variables. It can be seen from this table that the eight key life skills, along with total life skills, displayed significant and positive correlations with the eight overall transfer scores and total transfer. These significant positive correlations ranged from .35 to .87 in size ($p < .001$). It can be seen from Table 2 (bolded correlations) that each life skill subscale had the highest positive correlation with its requisite transfer scale (i.e., the teamwork subscale of the LSSS had its largest correlation with the teamwork transfer subscale of the LSSS-TS). Such a finding provided evidence of convergent validity for the transfer scale. All of these significant correlations were large in size (*r* range

= .54–.76) with the exception of goal setting and goal setting transfer, which had a medium sized correlation (r = .46).

The mean scores on the 1–5 response scale for the transfer subscales revealed participants are transferring 'some' (word label corresponding to 3 on the response scale) life skills to other life domains. The mean scores from highest to lowest for the transfer subscales were as follows: social skills (M = 3.26, SD = 0.88), interpersonal communication (M = 3.25, SD = 0.96), leadership (M = 3.09, SD = 0.94), time management (M = 3.09, SD = 0.97), problem solving and decision making (M = 3.08, SD = 0.87), teamwork (M = 3.00, SD = 0.88), goal setting (M = 2.98, SD = 0.89), emotional skills (M = 2.95, SD = 0.95), and total life skills transfer (M = 3.09, SD = 0.77).

Lastly, Table 2 shows that both Cronbach's alpha and McDonald's omega coefficients were calculated for each subscale. The values for these two reliability coefficients were identical after rounding up to two decimal places. The reliability coefficients for each of the transfer subscales were as follows: teamwork (.84), goal setting (.87), social skills (.87), problem solving and decision making (.87), emotional skills (.89), leadership (.90), time management (.89), interpersonal communication (.90), and total life skills transfer (.97). These values are all above the .70 criteria for adequate internal consistency reliability (Nunnally & Bernstein, 1994). Please note that the final 40-item version of the LSSS-TS is available within Appendix A of the supplementary materials.

Table 3 displays the mean score, standard deviation, minimum and maximum values, skewness, and kurtosis for each of the five transfer domains. These scores were calculated by summing up and averaging the parallel worded items that loaded onto each transfer domain. The mean scores from highest to lowest for the transfer domains were as follows: school/ education (M = 3.32, SD = 0.81), home/ family (M = 3.12, SD = 0.82), social settings

548 (*M* = 3.12, *SD* = 0.87), community (*M* = 2.98, *SD* = 0.88), and employment (*M* = 2.89, *SD* =
549 0.85).

550 **Discussion**

551 For a skill learned in sport to be considered a life skill, it must be transferred to non-
552 sporting domains such as at home or in school (Holt et al., 2016; Pierce et al., 2017). With
553 this in mind, the purpose of the present research was to develop and provide validity and
554 reliability evidence for a new scale to assess youth sport participants' perceptions of life
555 skills transfer. During this research, we added to the LSSS (Cronin & Allen, 2017) by
556 developing transfer subscales for the eight key life skills measured by the original LSSS.
557 Across two studies, evidence of content, factorial, and convergent validity of the scale was
558 provided, along with the internal consistency reliability of the subscales. Providing such
559 validity and reliability evidence is an important step when developing a scale for use in sport
560 psychology, and specifically the youth sport context (Gunnell et al., 2014). The transfer
561 subscales of the new scale assessed the extent to which participants perceived they
562 transferred life skills to the following domains: social settings, home/ family, school/
563 education, community, and employment. Due to the time young people spend in the
564 classroom, school/ education is regarded as a key area for life skills transfer (Allen et al.,
565 2015; Pierce et al., 2017). This can also be said for how much time youth spend with their
566 family, making home/ family another recognised area of life skills transfer (Weiss et al.,
567 2014). Social settings (Weiss et al., 2014), community (Holt et al., 2016), and employment
568 (Kendellen & Camiré, 2017) are also considered to be key domains for life skills transfer
569 based on the previous research literature. Therefore, it is an important advancement for the
570 research area that the LSSS-TS can assess the transfer of eight key life skills from sport to
571 these five non-sporting domains.

When assessing the results of the LSSS-TS in Study 2, based on the mean scores, the life skills participants perceived they were transferring to the greatest extent were social skills, communication, leadership, and time management. The life skills participants perceived they were transferring to a lesser extent were problem solving and decision making, teamwork, goal setting, and emotional skills. Given the importance of life skills transfer within the research area (Holt at el., 2017; Pierce et al., 2019), it is encouraging that sports participants indicated they were transferring 'some' (3 on the 1–5 response scale) life skills learned in sport to other life domains. Based on the transfer domain mean scores, the areas participants felt they were transferring life skills to the greatest extent were school/ education, home/ family, and social settings. This aligns with previous research showing these to be key domains for life skills transfer (e.g., Allen et al., 2015; Weiss et al., 2014). To a lesser extent, participants perceived they were transferring life skills to the community and employment. Again, it is promising that participants felt they were transferring life skills to these domains to 'some' extent (3 on the 1–5 response scale). Overall, these are important findings as they are the first of their kind to show the extent to which participants perceive they are transferring different life skills and to what particular life domains. Future studies can utilise the LSSS-TS to further investigate these novel findings in different countries, cultures, and contexts. Also, it would be important for future studies to assess how youth sport participants are developing these life skills and the processes by which they are learning to transfer these life skills to other areas of their lives.

From a research perspective, the LSSS-TS is an important addition to the research literature. As life skills transfer has not been fully examined within the literature (Holt at el., 2017; Jacobs & Wright, 2019; Pierce et al., 2019), the LSSS-TS will allow for this construct to be investigated in more detail. In this regard, several researchers have highlighted the lack of quantitative measures for assessing life skills transfer (Holt at el., 2017; Jacobs & Wright,

2019; Kendellen & Camire, 2020), with only the LSTS available to specifically assess life skills transfer in The First Tee golf program (Weiss et al., 2014; Wright et al., 2019). As such, with the only current measure assessing life skills transfer focusing on the sport of golf, a novel element of the current study is that the scale will allow for the measurement of life skills transfer across a variety of youth sports. Along with assessing many different sports, individual versus team sports could be investigated to establish if differences in perceived life skills transfer exist between team and individual sport participants. Additionally, future studies could look at the processes by which youth sport participants develop their life skills in sport and use the LSSS-TS to assess the transfer of these life skills to non-sporting domains. Moreover, researchers could use the scale to assess life skills programs such as SUPER (Danish, 2002), TAP (Allen et al., 2015), and Project SCORE (Strachan et al., 2016) to see if life skills such as teamwork, goal setting, problem solving, emotional skills, and communication, which are taught via these programs, are being transferred to other life domains such as home, school, employment, social settings, or the community. Along with these, new life skills programs can be designed which focus on the development of the eight key life skills measured by the LSSS and include specific transfer strategies addressing the LSSS-TS transfer domains. Specifically, the LSSS-TS could be used to assess the effectiveness of such programs in terms of developing and transferring life skills. Furthermore, researchers could use the LSSS-TS in conjunction with the CLSS-Q (Camiré et al., 2021) to measure the success of intervention studies aimed at training coaches to develop athletes' life skills and help their athletes to transfer such life skills. However, before undertaking such research, evidence for the test-retest reliability of the LSSS-TS should be established. Finally, the LSSS-TS could be adapted and used with other key social agents. For example, as with the LSSS, researchers could adapt the LSSS-TS for use with coaches (e.g., Camiré, Rathwell, Turgeon, & Kendellen, 2019) or to gain parents' perspectives on the

extent to which youth sport participants are transferring life skills to other life domains.

From a practical perspective, the scale will allow coaches and/or club administrators to quantitatively assess the extent to which athletes perceive transfer is occurring. This will allow clubs and coaches who aim to develop young people holistically to inform parents/guardians about the life skills their children are learning in sport and transferring to key life domains (i.e., to market their sports programs). Such clubs often have mission statements regarding developing 'good people' and the LSSS-TS can help to assess, emphasise, and reinforce the life skills youth are learning in sport and transferring to other life domains. Additionally, the scale will help coaches to further promote transfer within their coaching and re-assess if their efforts have been successful. The LSSS-TS can also help to assist coaches in gaining a better understanding of how to promote life skills transfer via implicit or explicit processes (Holt et al., 2017). For example, if a goal setting task is incorporated within their session, coaches can emphasise the transfer of these goal setting skills to home life or school and then measure the extent to which their athletes perceive they are transferring their goal setting skills to these domains. Again, the effectiveness of the transfer element of life skills programs such as SUPER (Danish, 2002), TAP (Allen et al., 2015), and Project Score (Strachan et al., 2016) could be quantitatively assessed. In doing so, results of the LSSS-TS can inform coaches if the strategies they are adopting to promote life skills transfer are working.

Limitations and Future Research

Although this study provides an important contribution to the research area, it is not without limitations. To begin with, as only British youth sport participants took part in this research, future studies can examine the psychometric properties of the scale across different countries/cultures. Also, studies can be conducted with a larger variety of youth sport participants including various levels of competition (e.g., recreational and elite level). Next,

with the scale relying on participants' perceptions of the extent to which they transfer life skills, there could be concerns with the accuracy and social desirability of the responses given – as is the case with any self-report measure (Zilvinskis, Masseria, & Pike 2017; Zlatkin-Troitschanskaia, Shavelson, & Kuhn 2015). These concerns were addressed in the current study through requests for honesty when responding and the protection of participant anonymity. Future research could reduce any potential response biases by obtaining the perspectives of key influencers (coaches, parents, or peers) when assessing participants' life skills transfer. Another limitation is that the LSSS-TS only applies to the eight life skills measured by the LSSS. Whilst these eight life skills are commonly cited within the research area, further transfer scales which measure different life skills could be developed. A further limitation of this research is that only certain forms of validity and reliability were assessed. As reliability and validity are ongoing processes, future research should assess the test-retest reliability of the scale, along with providing evidence for other forms of validity (e.g., predictive, concurrent, and nomological validity). Also, even though the LSSS-TS is aimed at youth sport participants aged 11–21 years, the participants in this study only ranged from 12–17 years. Therefore, further research will need to be conducted with participants across the whole age range and assess the invariance of the scale across different age ranges and genders. Next, a limitation is that the LSSS and LSSS-TS combined has a total of 83 items which may make it difficult to add additional scales to measure further constructs, especially at the lower end of the intended age range. Also, the participants within this study had an average of 5.5 years playing experience for their primary sport and played this sport for an average of 3.96 hours per week. Given the length of their playing experience and the hours per week they participate in their sport, our participants may have had more experiences with life skills transfer. Therefore, future studies can assess life skills transfer with youth sport participants who are considered less experienced in their chosen sport. Finally, future

research could be conducted which uses the LSSS-TS in combination with, and to compliment, qualitative approaches.

Conclusion

The present research provided initial evidence for the validity and reliability of the LSSS-TS which can be used to thoroughly assess life skills transfer from sport. Researchers can use the scale to test the transfer of eight key life skills learned in sport to other important areas of life and help to guide coaches in their delivery of sessions which incorporate life skills transfer. Also, researchers and practitioners can now look to develop life skills programs which specifically teach the eight key life skills and help to promote the transfer of these life skills. Ultimately, it is hoped that the LSSS-TS proves a useful tool for researchers, governing bodies, and sports clubs who may be interested in promoting the transfer of life skills developed in sport to other life domains.

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Table 1

Model fit and information criteria for the models tested in Study 2.

Model	χ^2	*df*	χ^2 / *df*	RMSEA	CFI	TLI	AIC	BIC	ABIC
64 Items									
CFA – Eight-factor model	3683.19***	1860	1.98	.06	.88	.87	47210	48281	47380
CFA – Bifactor model	3637.54***	1824	1.99	.06	.88	.87	47219	48426	47411
ESEM model	3203.27***	1468	2.18	.06	.88	.84	47164	49713	47569
B-ESEM model	2849.47***	1412	2.02	.06	.90	.86	46914	49675	47353
40 Items									
CFA – Eight-factor model	1150.93***	672	1.71	.05	.94	.93	30403	31112	30516
CFA – Bifactor model	1101.67***	660	1.67	.05	.94	.93	30361	31115	30481
ESEM model	828.79***	448	1.85	.05	.96	.93	30313	31867	30560
B-ESEM model	713.12***	416	1.71	.05	.97	.94	30262	31936	30528

Note. $N = 321$. RMSEA = Root mean square error of approximation; CFI = Comparative fit index; TLI = Tucker Lewis index; AIC = Akaike information criterion; BIC = Bayesian information criterion; ABIC = Sample size adjusted BIC.
***$p < .001$

Table 2
Summary of intercorrelations, scale ranges, means, standard deviations, reliability estimates, skewness and kurtosis in Study 2.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1. TW	–																	
2. GS	.43***	–																
3. SS	.48***	.50***	–															
4. PS	.31***	.50***	.50***	–														
5. ES	.44***	.36***	.53***	.48***	–													
6. LS	.58***	.49***	.59***	.45***	.56***	–												
7. TM	.40***	.46***	.38***	.43***	.50***	.41***	–											
8. CS	.48***	.47***	.59***	.49***	.52***	.55***	.47***	–										
9. Total Life Skills	.68***	.70***	.77***	.71***	.76***	.78***	.70***	.79***	–									
10. TWTR	**.54*** **	.43***	.47***	.47***	.42***	.48***	.41***	.46***	.62***	–								
11. GSTR	.44***	**.46*** **	.55***	.47***	.40***	.45***	.47***	.40***	.61***	.67***	–							
12. SSTR	.47***	.42***	**.60*** **	.43***	.45***	.53***	.47***	.46***	.65***	.62***	.69***	–						
13. PSTR	.43***	.39***	.52***	**.59*** **	.45***	.51***	.42***	.45***	.64***	.66***	.72***	.71***	–					
14. ESTR	.38***	.35***	.50***	.49***	**.63*** **	.53***	.42***	.52***	.66***	.59***	.65***	.61***	.68***	–				
15. LSTR	.48***	.42***	.55***	.44***	.51***	**.64*** **	.42***	.48***	.67***	.69***	.69***	.68***	.71***	.69***	–			
16. TMTR	.40***	.37***	.44***	.41***	.47***	.43***	**.58*** **	.43***	.60***	.59***	.69***	.65***	.69***	.63***	.69***	–		
17. CSTR	.43***	.38***	.56***	.46***	.51***	.52***	.45***	**.67*** **	.68***	.58***	.60***	.69***	.67***	.70***	.69***	.66***	–	
18. Total Transfer	.53***	.48***	.62***	.56***	.57***	.61***	.54***	.58***	**.76*** **	.80***	.85***	.84***	.87***	.83***	.87***	.83***	.84***	–
Range	1–5	1–5	1–5	1–5	1–5	1–5	1–5	1–5	1–5	1–5	1–5	1–5	1–5	1–5	1–5	1–5	1–5	1–5
Mean	3.89	3.74	3.42	3.26	3.27	3.66	2.78	3.57	3.53	3.00	2.98	3.26	3.08	2.95	3.09	3.09	3.25	3.09
SD	0.76	0.79	0.86	0.91	1.05	0.86	0.75	0.99	0.66	0.88	0.89	0.88	0.87	0.95	0.94	0.97	0.96	0.77
Cronbach's α	.88	.91	.84	.88	.88	.92	.88	.88	.96	.84	.87	.87	.87	.89	.90	.89	.90	.97
McDonald's ω	.89	.91	.84	.88	.88	.92	.88	.88	.96	.84	.87	.87	.87	.89	.90	.89	.90	.97
Skewness	-.90	-.44	-.42	-.11	-.46	-.70	-.38	-.50	-.35	-.19	-.25	-.26	-.23	-.21	-.17	-.18	-.31	-.27
Kurtosis	.75	.06	-.27	-.39	-.41	.22	-.33	-.11	.06	-.36	-.37	-.21	-.30	-.51	-.41	-.56	-.49	-.24

Note. N = 321. TW = Teamwork; GS = Goal setting; SS = Social skills; PS = Problem solving & decision making; ES = Emotional skills; LS = Leadership; TM = Time management; CS = Interpersonal communication; *SD* = Standard deviation.
***$p < .001$.

Table 3
Mean scores, standard deviations, minimum and maximum values, skewness and kurtosis values for the transfer domains in Study 2.

Domain	*Mean*	*SD*	Min	Max	Skewness	Kurtosis
School/ Education	3.32	0.81	1	5	-.31	-.06
Home/ Family	3.12	0.82	1	5	-.26	-.12
Community	2.98	0.88	1	5	-.26	-.47
Employment	2.89	0.85	1	5	-.20	-.41
Social Settings	3.12	0.87	1	5	-.25	-.23

Note. N = 321. *SD* = Standard deviation.

Supplementary Materials

Table A

I-CVI scores for items in original LSSS-TS (Study 1).

Item	Domain	TW	GS	SS	PS	ES	LS	TM	CS	Ave
1. In other areas of my life	Gen.	.50	.60	.70	.80	.70	.70	.70	.60	.66
2. When interacting with friends	Soc.	.70	.40	1.00	.70	1.00	.80	.40	.90	.74
3. In school/ education	Sch.	.90	1.00	1.00	1.00	.80	1.00	1.00	1.00	.96
4. At home	Hom.	.70	.60	.80	.90	.90	.50	1.00	.80	.78
5. Within my community (e.g., when volunteering)	Com.	.90	.90	.80	1.00	.80	.90	.70	.90	.86
6. In my job/ when doing chores	Emp.	.70	.90	.70	.90	.80	.90	1.00	1.00	.86
7. With my family	Hom.	.80	.50	.80	.90	1.00	.50	.60	1.00	.76
8. In relationships with others	Soc.	.60	.50	.90	.80	.90	.80	.60	.90	.75
9. Within my academic studies	Sch.	.80	1.00	.70	1.00	.70	.90	1.00	.80	.86
10. When engaging with other people in the community	Com.	.70	.50	.90	.80	.80	.90	.40	.90	.74
11. In other everyday situations	Gen.	.40	.60	.60	.60	.60	.60	.60	.60	.58

Note. *N* = 10. Gen. = General item; Soc. = Social settings; Sch. = School/ education; Hom. = Home/ family; Com. = Community; Emp. = Employment; TW = Teamwork; GS = Goal setting; SS = Social skills; PS = Problem solving & decision making; ES = Emotional skills; LS = Leadership; TM = Time management; CS = Interpersonal communication; Ave = average item score across the subscales.

Table B
Factor loadings for CFA and B-CFA Models (64-items) in Study 2.

	Eight-Factor model		Bifactor CFA Model		
Item	FL	Uniqueness	Specific FL	General FL	Uniqueness
TWTR1	.72***	.45***	.46***	.56***	.45***
TWTR2	.73***	.41***	.38***	.60***	.42***
TWTR3	.76***	.40***	.48***	.59***	.40***
TWTR4	.62***	.47***	.39***	.51***	.44***
TWTR5	.61***	.50***	.36***	.52***	.48***
TWTR6	.76***	.37***	.48***	.59***	.34***
TWTR7	.81***	.22***	.42***	.69***	.22***
TWTR8	.75***	.34***	.46***	.60***	.33***
GSTR1	.72***	.46***	.43***	.60***	.44***
GSTR2	.69***	.30***	.36***	.56***	.31***
GSTR3	.82***	.27***	.48***	.67***	.28***
GSTR4	.77***	.28***	.39***	.68***	.27***
GSTR5	.72***	.35***	.28***	.67***	.34***
GSTR6	.78***	.25***	.42***	.68***	.23***
GSTR7	.76***	.35***	.33***	.69***	.34***
GSTR8	.72***	.31***	.41***	.60***	.28***
SSTR1	.74***	.29***	.43***	.59***	.32***
SSTR2	.79***	.30***	.52***	.61***	.28***
SSTR3	.81***	.31***	.51***	.64***	.30***
SSTR4	.73***	.36***	.32***	.67***	.36***
SSTR5	.67***	.44***	.20**	.67***	.44***
SSTR6	.81***	.32***	.43***	.68***	.32***
SSTR7	.79***	.32***	.41***	.68***	.32***
SSTR8	.80***	.29***	.41***	.69***	.30***
PSTR1	.78***	.37***	.43***	.66***	.34***
PSTR2	.74***	.28***	.38***	.63***	.27***
PSTR3	.79***	.35***	.38***	.70***	.34***
PSTR4	.71***	.32***	.26***	.67***	.32***
PSTR5	.72***	.38***	.37***	.65***	.36***
PSTR6	.84***	.25***	.29**	.78***	.28***
PSTR7	.80***	.32***	.31***	.74***	.33***
PSTR8	.74***	.30***	.26**	.69***	.32***
ESTR1	.79***	.32***	.51***	.61***	.30***
ESTR2	.79***	.31***	.58***	.57***	.27***
ESTR3	.84***	.22***	.48***	.68***	.22***
ESTR4	.75***	.36***	.38***	.66***	.35***
ESTR5	.75***	.35***	.41***	.65***	.34***
ESTR6	.78***	.36***	.31***	.73***	.37***
ESTR7	.83***	.26***	.41***	.72***	.27***
ESTR8	.81***	.29***	.41***	.70***	.30***
LSTR1	.78***	.18***	.42***	.65***	.18***
LSTR2	.81***	.22***	.42***	.68***	.23***
LSTR3	.86***	.25***	.50***	.72***	.22***
LSTR4	.78***	.30***	.36***	.69***	.31***
LSTR5	.72***	.32***	.29***	.67***	.32***
LSTR6	.82***	.33***	.43***	.70***	.32***

LSTR7	.82***	.27***	.38***	.73***	.27***
LSTR8	.73***	.40***	.22***	.71***	.41***
TMTR1	.79***	.38***	.38***	.69***	.38***
TMTR2	.73***	.37***	.40***	.60***	.38***
TMTR3	.80***	.32***	.47***	.65***	.31***
TMTR4	.78***	.29***	.43***	.67***	.28***
TMTR5	.79***	.31***	.40***	.69***	.30***
TMTR6	.83***	.28***	.40***	.73***	.29***
TMTR7	.78***	.30***	.41***	.67***	.30***
TMTR8	.78***	.33***	.42***	.65***	.32***
CSTR1	.74***	.36***	.55***	.54***	.32***
CSTR2	.79***	.29***	.58***	.58***	.25***
CSTR3	.85***	.24***	.55***	.67***	.22***
CSTR4	.77***	.35***	.37***	.69***	.35***
CSTR5	.74***	.36***	.35***	.65***	.37***
CSTR6	.84***	.24***	.45***	.70***	.27***
CSTR7	.81***	.30***	.39***	.71***	.32***
CSTR8	.79***	.32***	.39***	.66***	.34***

Note. $N = 321$. FL = Factor Loading; TW = Teamwork; GS = Goal setting; SS = Social skills; PS = Problem solving & decision making; ES = Emotional skills; LS = Leadership; TM = Time management; CS = Interpersonal communication; TR = Transfer.
**$p < .01$. ***$p < .001$.

Table C
Standardized factor loadings and uniqueness of items for the 64-item ESEM Model in Study 2.

Item	TW	GS	SS	PS	ES	LS	TM	CS	Uniqueness
TWTR1	**.67*** **	.08	.10	-.08	.12	-.03	.02	-.10	.42***
TWTR2	**.60*** **	.12	-.04	-.03	.03	-.05	.09	.10	.43***
TWTR3	**.62*** **	.13	-.07	.13	-.10	.10	-.06	.07	.42***
TWTR4	**.58*** **	.00	-.02	.08	.00	.01	-.02	.08	.37***
TWTR5	**.53*** **	.01	-.01	.10	-.07	.00	.15	.02	.39***
TWTR6	**.65*** **	.01	-.04	.16	-.06	.09	.08	-.05	.35***
TWTR7	**.62*** **	.08	-.02	.10	.01	.12*	.03	.00	.19***
TWTR8	**.64*** **	.01	.00	.01	.07	.06	-.02	.06	.33***
GSTR1	.04	**.70*** **	-.01	.11	.09	.02	-.12	-.02	.42***
GSTR2	.07	**.60*** **	.22**	-.18	.04	-.14	.10	.07	.28***
GSTR3	.03	**.75*** **	.10	-.08	.07	.01	.14*	-.12	.26***
GSTR4	-.05	**.67*** **	-.01	-.03	.01	.11	.08	.09	.26***
GSTR5	.04	**.51*** **	.00	.00	.07	.10	.10	.06	.34***
GSTR6	.01	**.70*** **	-.04	.09	.03	.07	.01	.02	.22***
GSTR7	.29**	**.45*** **	.01	.08	.07	.12	-.04	-.04	.32***
GSTR8	.12	**.52** **	.10	-.01	.09	.10	-.09	.02	.30**
SSTR1	.06	-.05	**.60*** **	-.09	.01	.15	.03	.22**	.31***
SSTR2	.08	-.05	**.64*** **	-.06	.03	.15	.01	.16*	.27***
SSTR3	.00	.15*	**.63*** **	.11	-.02	.13	-.03	.04	.32***
SSTR4	-.01	.20**	**.41*** **	.19*	.01	.04	.05	.08	.34***
SSTR5	.04	.23*	**.24***	.24	-.08	-.06	.22	.12	.41***
SSTR6	-.03	.13*	**.57*** **	.16*	-.06	.12	.06	.08	.33***
SSTR7	.02	.06	**.56*** **	.18*	.04	.05	.07	.05	.33***
SSTR8	-.04	.09	**.55*** **	.16*	.11	.10	.04	.04	.31***
PSTR1	.20*	-.01	.03	**.48** **	.16	.06	.03	.02	.01
PSTR2	.16	.04	.19*	**.35**	.08	-.02	.09	.06	.24**
PSTR3	.13	.04	.13	**.52** **	.02	.07	.02	.08	.38***
PSTR4	.15	.02	-.10	**.39***	.05	.10	.03	.30***	.32***
PSTR5	.03	.11	-.01	**.52** **	.03	.09	.07	.08	.39***
PSTR6	.11	.09	.16*	**.50*** **	.13*	.10	.10	-.11	.26***
PSTR7	-.02	.03	.27***	**.52*** **	.17**	.03	.11	-.05	.31***
PSTR8	.06	.00	.14	**.48** **	.18*	-.08	.09	.11	.31***
ESTR1	.11	-.08	.13**	-.09	**.79*** **	-.02	-.03	.02	.27***
ESTR2	-.02	.06	-.07	-.15*	**.85*** **	.03	-.03	.08	.27***
ESTR3	.01	.08	.02	.02	**.70*** **	-.01	.03	.06	.21***
ESTR4	.03	.16*	-.24***	.12	**.54*** **	.09	-.02	.18**	.33***
ESTR5	-.03	.16*	-.24**	.16	**.61*** **	.09	.13	-.06	.33***
ESTR6	.01	.15	.14	.13	**.55*** **	-.11	.11	.00	.35***

ESTR7	-.01	-.06	.11*	.13	**.69*** **	.07	.02	.03	.25***
ESTR8	-.10	-.02	-.02	.20**	**.70*** **	.03	.09	.05	.27***
LSTR1	.17	-.01	.19**	-.24*	.12	**.62*** **	.01	.00	.28***
LSTR2	.10	.15	.08	-.19*	.11	**.59*** **	-.01	.06	.24***
LSTR3	.05	-.02	.08	.08	-.01	**.79*** **	.08	-.11	.19***
LSTR4	.00	.06	-.06	.06	-.02	**.62*** **	.03	.22**	.29***
LSTR5	-.08	.13	-.11	.09	-.03	**.58*** **	.11	.14	.31***
LSTR6	.05	.00	.11*	.03	.02	**.71*** **	.03	-.02	.30***
LSTR7	.05	-.03	.15**	.05	.04	**.64*** **	.07	.01	.28***
LSTR8	.03	.09	.06	.16	.03	**.40** **	.14	.02	.42***
TMTR1	.05	.08	.03	.05	.03	-.05	**.65*** **	.04	.38***
TMTR2	.03	-.01	.15*	-.13	.03	-.10	**.74*** **	.07	.35***
TMTR3	.06	.07	.05	-.01	-.11	-.15*	**.86*** **	.06	.25***
TMTR4	.00	-.01	-.06	.07	-.01	.04	**.71*** **	.10	.29***
TMTR5	-.08	.09	-.10	-.01	.01	.21**	**.70*** **	.02	.28***
TMTR6	.05	.04	-.03	.05	.03	.12	**.67*** **	-.02	.30***
TMTR7	.05	-.15*	.05	.09	.16*	.15	**.68*** **	-.15	.30***
TMTR8	.02	-.05	-.05	-.04	.11	.14	**.65*** **	.04	.32***
CSTR1	.17	-.13	.12	-.23	.18*	.00	.05	**.63*** **	.31***
CSTR2	.14*	-.15	.15*	-.18	.12	.01	.08	**.68*** **	.24***
CSTR3	.04	.04	.10	.08	.05	-.04	-.05	**.77*** **	.22***
CSTR4	-.08	.13*	-.08	.17**	.02	.01	.08	**.67*** **	.30***
CSTR5	.03	.03	-.09	.08	-.02	.10	.13	**.60*** **	.35***
CSTR6	-.03	.13	.11	.05	-.09	.02	.10	**.70*** **	.22***
CSTR7	-.09	.09	.15	.06	.13	.10	-.02	**.55*** **	.30***
CSTR8	.04	-.07	.03	.13*	.11	.12	-.04	**.60*** **	.31***

Note. N = 321. TW = Teamwork; GS = Goal setting; SS = Social skills; PS = Problem solving & decision making; ES = Emotional skills; LS = Leadership; TM = Time management; CS = Interpersonal communication; TR = Transfer.
*p < .05. **p < .01. ***p < .001.

Table D
Standardized factor loadings and uniqueness of items for the 64-item B-ESEM Model in Study 2.

Item	TW	GS	SS	PS	ES	LS	TM	CS	General Factor	Uniqueness
TWTR1	**.49*** **	.05	.11*	-.07	.08	.04	-.01	-.04	.55***	.42***
TWTR2	**.42*** **	.08	-.01	.01	.02	.01	.04	.07	.59***	.42***
TWTR3	**.42*** **	-.02	-.12*	-.09	-.11*	.02	-.12*	-.07	.63***	.37***
TWTR4	**.39*** **	-.01	-.01	.02	.00	.02	-.04	.03	.50***	.38***
TWTR5	**.35*** **	-.01	-.02	.03	-.06	.00	.06	-.03	.52***	.41***
TWTR6	**.44*** **	-.02	-.05	.04	-.06	.06	.00	-.09	.61***	.35***
TWTR7	**.43*** **	.07	-.01	.08	.01	.11**	.01	-.03	.68***	.20***
TWTR8	**.46*** **	.05	.04	.06	.08	.10**	.00	.06	.59***	.33***
GSTR1	-.02	**.37*** **	-.10	.00	-.04	-.08	-.12*	-.14**	.62***	.41***
GSTR2	.04	**.44*** **	.21**	.01	.01	-.07	.09	.08	.53***	.29***
GSTR3	.01	**.45*** **	.03	-.08	-.02	-.05	.06	-.15**	.68***	.27***
GSTR4	-.06	**.40*** **	-.06	-.03	-.05	.01	.04	-.03	.68***	.26***
GSTR5	.01	**.35*** **	-.02	.05	.02	.04	.07	.00	.65***	.30***
GSTR6	-.04	**.37*** **	-.14**	-.04	-.07	-.06	-.05	-.13*	.70***	.22***
GSTR7	.19**	**.32*** **	-.03	.10	.02	.08	-.03	-.08	.68***	.31***
GSTR8	.08	**.45*** **	.08	.16*	.06	.10	.00	.02	.57***	.24***
SSTR1	.04	.00	**.53** **	.04	.04	.14*	.02	.25***	.56***	.30***
SSTR2	.07	.02	**.57*** **	.04	.06	.13*	.02	.21***	.59***	.25***
SSTR3	-.02	.04	**.46*** **	-.02	-.04	.02	-.07	.00	.66***	.33***
SSTR4	-.06	.03	**.27*** **	-.03	-.05	-.08	-.05	-.04	.68***	.31***
SSTR5	-.05	.01	**.09**	-.05	-.14*	-.18**	.03	-.07	.70***	.37***
SSTR6	-.06	.01	**.39*** **	-.01	-.09*	-.01	-.03	.00	.69***	.33***
SSTR7	-.02	-.04	**.39*** **	.02	-.02	-.04	-.02	-.02	.69***	.32***
SSTR8	-.05	.00	**.41*** **	.02	.05	.00	-.03	.00	.69***	.29***
PSTR1	.09	.03	-.01	**.38*** **	.06	.01	.00	-.01	.66***	.24*
PSTR2	.08	.10	.16**	**.35** **	.03	-.02	.06	.06	.62***	.25***
PSTR3	.02	-.01	.01	**.30*** **	-.06	-.04	-.05	-.05	.71***	.36***
PSTR4	.05	.04	-.13*	**.35*** **	.01	.04	.02	.15*	.67***	.26***
PSTR5	-.05	.06	-.10	**.38*** **	-.05	-.03	.02	-.05	.66***	.35***
PSTR6	.01	-.01	.02	**.24***	.00	-.04	-.02	-.19***	.79***	.26***
PSTR7	-.08	-.02	.13*	**.30** **	.04	-.07	.01	-.12*	.73***	.31***
PSTR8	-.04	-.03	.03	**.30** **	.06	-.12	.01	-.01	.68***	.30***
ESTR1	.10*	-.08	.15**	-.08	**.54*** **	.04	-.04	.11*	.60***	.24***
ESTR2	.01	.05	.00	-.02	**.58*** **	.08	.01	.16**	.57***	.27***
ESTR3	.00	-.02	.01	-.06	**.44*** **	-.03	-.03	.05	.70***	.19**
ESTR4	-.01	.06	-.21***	.06	**.33*** **	.03	-.03	.09	.67***	.34***
ESTR5	-.03	.05	-.23***	.05	**.36*** **	.01	.04	-.09	.67***	.33***

ESTR6	-.03	.01	.07	-.03	**.31*** **	-.13	-.01	-.04	.73***	.34***
ESTR7	-.01	-.05	.08	.09	**.46*** **	.05	.00	.06	.70***	.25***
ESTR8	-.09	-.03	-.04	.12*	**.44*** **	-.01	.04	.04	.69***	.27***
LSTR1	.17**	.04	.19**	-.05	.12*	**.47*** **	.03	.10	.62***	.28***
LSTR2	.10*	.08	.07	-.10	.08	**.40*** **	-.02	.08	.68***	.21***
LSTR3	.06	-.05	.02	.01	-.03	**.45*** **	.01	-.10*	.73***	.19***
LSTR4	.00	-.01	-.09	.00	-.02	**.35*** **	.00	.10	.71***	.30***
LSTR5	-.07	.00	-.16*	-.03	-.05	**.28*** **	.03	.01	.69***	.30***
LSTR6	.06	-.03	.05	.00	.01	**.42*** **	.00	-.03	.71***	.31***
LSTR7	.05	-.04	.09*	.02	.02	**.38*** **	.03	.00	.73***	.28***
LSTR8	-.02	-.07	-.05	-.07	-.05	**.16** **	.00	-.10	.72***	.34***
TMTR1	-.02	-.04	-.05	-.11	-.05	-.11*	**.33*** **	-.03	.71***	.30***
TMTR2	.00	-.04	.13*	-.13	.00	-.09	**.43*** **	.10	.61***	.31***
TMTR3	-.01	-.01	.00	-.11	-.13*	-.16***	**.46*** **	.00	.67***	.24***
TMTR4	-.04	-.01	-.08	.04	-.04	-.01	**.41*** **	.04	.67***	.29***
TMTR5	-.07	.10	-.10	.06	-.01	.12*	**.44*** **	.02	.68***	.27***
TMTR6	.01	.03	-.06	.03	-.01	.06	**.40*** **	-.02	.72***	.29***
TMTR7	.03	-.02	.04	.15*	.11*	.12*	**.44*** **	-.06	.66***	.28***
TMTR8	.01	.07	-.02	.11	.09	.13**	**.45*** **	.10	.63***	.29***
CSTR1	.14**	.01	.21***	.04	.20***	.11*	.12*	**.61*** **	.52***	.23**
CSTR2	.10*	-.05	.21***	.00	.15**	.09	.10*	**.62*** **	.57***	.20**
CSTR3	-.04	-.05	.06	-.01	.02	-.06	-.06	**.49*** **	.70***	.23***
CSTR4	-.14**	-.02	-.12**	.03	-.02	-.07	.01	**.36*** **	.71***	.31***
CSTR5	-.05	-.10	-.12**	-.06	-.05	-.01	.02	**.33*** **	.68***	.34***
CSTR6	-.10*	-.03	.03	-.08	-.1*	-.07	.00	**.40*** **	.73***	.23***
CSTR7	-.13**	-.06	.07	-.09	.06	-.01	-.07	**.33*** **	.73***	.26***
CSTR8	-.03	-.10	-.01	.04	.07	.05	-.04	**.38*** **	.67***	.31***

Note. N = 321. TW = Teamwork; GS = Goal setting; SS = Social skills; PS = Problem solving & decision making; ES = Emotional skills; LS = Leadership; TM = Time management; CS = Interpersonal communication; TR = Transfer.
*p < .05. **p < .01. ***p < .001.

Table E

Mean scores, standard deviations, minimum and maximum values, skewness and kurtosis values for Study 2.

Item	*Mean*	*SD*	Min	Max	Skewness	Kurtosis
TWTR1	3.41	1.06	1	5	-.37	-.29
TWTR2	3.29	1.06	1	5	-.37	-.34
TWTR3	3.00	1.12	1	5	-.21	-.67
TWTR4	2.90	1.17	1	5	-.02	-.79
TWTR5	2.65	1.14	1	5	.25	-.65
TWTR6	3.02	1.15	1	5	-.10	-.77
TWTR7	3.13	1.12	1	5	-.09	-.69
TWTR8	3.22	1.02	1	5	-.25	-.30
GSTR1	2.92	1.08	1	5	-.01	-.69
GSTR2	3.34	1.07	1	5	-.32	-.51
GSTR3	3.03	1.08	1	5	-.03	-.68
GSTR4	2.83	1.14	1	5	-.05	-.81
GSTR5	2.81	1.11	1	5	.08	-.60
GSTR6	2.91	1.12	1	5	-.15	-.68
GSTR7	2.88	1.11	1	5	-.12	-.70
GSTR8	3.03	1.11	1	5	-.08	-.54
SSTR1	3.55	1.08	1	5	-.36	-.55
SSTR2	3.47	1.05	1	5	-.38	-.27
SSTR3	3.28	1.06	1	5	-.20	-.38
SSTR4	3.19	1.15	1	5	-.25	-.66
SSTR5	2.99	1.11	1	5	-.12	-.50
SSTR6	3.26	1.07	1	5	-.13	-.48
SSTR7	3.38	1.09	1	5	-.31	-.48
SSTR8	3.41	1.10	1	5	-.32	-.36
PSTR1	3.03	1.06	1	5	-.18	-.44
PSTR2	3.32	1.05	1	5	-.34	-.38
PSTR3	3.06	1.01	1	5	-.28	-.27
PSTR4	2.96	1.13	1	5	-.04	-.61
PSTR5	2.95	1.08	1	5	-.11	-.59
PSTR6	3.01	1.05	1	5	-.17	-.36
PSTR7	3.12	1.09	1	5	-.31	-.48
PSTR8	3.15	1.08	1	5	-.20	-.38
ESTR1	3.14	1.12	1	5	-.25	-.64
ESTR2	3.05	1.10	1	5	-.19	-.51
ESTR3	3.04	1.09	1	5	-.19	-.56
ESTR4	2.79	1.14	1	5	.01	-.74
ESTR5	2.79	1.14	1	5	.02	-.73
ESTR6	3.15	1.10	1	5	-.27	-.55
ESTR7	3.08	1.17	1	5	-.24	-.71
ESTR8	3.09	1.14	1	5	-.18	-.57
LSTR1	3.16	1.13	1	5	-.07	-.62
LSTR2	3.31	1.11	1	5	-.28	-.62
LSTR3	3.05	1.14	1	5	-.03	-.64
LSTR4	3.04	1.12	1	5	-.13	-.61
LSTR5	2.96	1.08	1	5	-.09	-.53
LSTR6	2.96	1.09	1	5	-.01	-.46

LSTR7	3.11	1.12	1	5	-.10	-.59
LSTR8	3.23	1.14	1	5	-.26	-.57
TMTR1	3.01	1.16	1	5	.03	-.70
TMTR2	3.39	1.18	1	5	-.21	-.81
TMTR3	3.18	1.17	1	5	-.08	-.80
TMTR4	2.95	1.18	1	5	.00	-.76
TMTR5	2.96	1.17	1	5	-.10	-.79
TMTR6	2.99	1.12	1	5	-.05	-.62
TMTR7	2.96	1.08	1	5	-.06	-.43
TMTR8	2.97	1.11	1	5	-.04	-.55
CSTR1	3.43	1.13	1	5	-.32	-.57
CSTR2	3.43	1.11	1	5	-.38	-.54
CSTR3	3.30	1.18	1	5	-.32	-.67
CSTR4	3.20	1.19	1	5	-.21	-.83
CSTR5	3.02	1.13	1	5	-.18	-.58
CSTR6	3.25	1.13	1	5	-.25	-.64
CSTR7	3.29	1.16	1	5	-.25	-.65
CSTR8	3.26	1.19	1	5	-.31	-.67

Note. N = 321. TW = Teamwork; GS = Goal setting; SS = Social skills; PS = Problem solving & decision making; ES = Emotional skills; LS = Leadership; TM = Time management; CS = Interpersonal communication. *SD* = Standard Deviation.

Table F

Factor loadings for CFA and B-CFA Models (40-items) in Study 2.

	Eight-Factor model		Bifactor CFA Model		
Item	FL	Uniqueness	Specific FL	General FL	Uniqueness
TWTR2	.74***	.39***	.39***	.61***	.42***
TWTR3	.75***	.39***	.47***	.58***	.40***
TWTR4	.65***	.44***	.43***	.53***	.40***
TWTR5	.64***	.46***	.44***	.53***	.41***
TWTR7	.75***	.29***	.32***	.69***	.30***
GSTR2	.72***	.30***	.44***	.57***	.29***
GSTR3	.81***	.29***	.46***	.66***	.29***
GSTR4	.82***	.24***	.45***	.70***	.22***
GSTR5	.76***	.32***	.31***	.70***	.33***
GSTR7	.68***	.40***	.23***	.67***	.39***
SSTR2	.77***	.29***	.50***	.60***	.26***
SSTR3	.80***	.29***	.56***	.62***	.23***
SSTR4	.76***	.36***	.30***	.69***	.39***
SSTR5	.70***	.41***	.22**	.66***	.44***
SSTR7	.75***	.35***	.40***	.65***	.35***
PSTR2	.76***	.29***	.34***	.66***	.31***
PSTR3	.78***	.34***	.38***	.67***	.33***
PSTR4	.77***	.28***	.31***	.71***	.28***
PSTR5	.75***	.37***	.39***	.67***	.34***
PSTR7	.73***	.38***	.27***	.70***	.37***
ESTR2	.79***	.29***	.60***	.58***	.22***
ESTR3	.83***	.23***	.45***	.68***	.25***
ESTR4	.81***	.30***	.40***	.70***	.31***
ESTR5	.78***	.33***	.41***	.66***	.34***
ESTR7	.75***	.33***	.35***	.69***	.33***
LSTR2	.81***	.23***	.39***	.70***	.25***
LSTR3	.83***	.30***	.36***	.73***	.32***
LSTR4	.84***	.24***	.46***	.73***	.21***
LSTR5	.76***	.28***	.40***	.67***	.24***
LSTR7	.78***	.30***	.31***	.73***	.30***
TMTR2	.74***	.37***	.43***	.60***	.37***
TMTR3	.81***	.30***	.53***	.64***	.27***
TMTR4	.82***	.26***	.43***	.69***	.27***
TMTR5	.84***	.26***	.40***	.73***	.28***
TMTR7	.72***	.35***	.34***	.66***	.34***
CSTR2	.77***	.30***	.49***	.58***	.31***
CSTR3	.86***	.22***	.61***	.66***	.15***
CSTR4	.82***	.31***	.43***	.69***	.31***
CSTR5	.75***	.37***	.33***	.66***	.39***
CSTR7	.78***	.35***	.35***	.70***	.36***

Note. N = 321. FL = Factor Loading; TW = Teamwork; GS = Goal setting; SS = Social skills; PS = Problem solving & decision making; ES = Emotional skills; LS = Leadership; TM = Time management; CS = Interpersonal communication; TR = Transfer.

**p < .01. ***p < .001.

Table G
Standardized factor loadings and uniqueness of items for the 40-item ESEM model in Study 2.

Item	TW	GS	SS	PS	ES	LS	TM	CS	Uniqueness
TWTR2	**.61*** **	.11	-.07	.00	.02	-.09	.04	.12*	.42***
TWTR3	**.66*** **	.13**	.01	.03	-.07	.04	-.08	.08	.43***
TWTR4	**.67*** **	.00	-.01	.05	.02	-.06	-.04	.02	.28***
TWTR5	**.68*** **	-.03	-.03	.03	-.04	-.11*	.12*	-.01	.31***
TWTR7	**.57*** **	.05	.06	.11	.10	.04	.04	-.04	.25***
GSTR2	.03	**.63*** **	.12*	-.07	.01	-.14**	.05	.06	.25***
GSTR3	.01	**.71*** **	.16***	-.04	.09	-.01	.08	-.12*	.29***
GSTR4	-.03	**.74*** **	-.01	.07	.03	.02	.01	.09*	.22***
GSTR5	.09	**.54*** **	-.02	.07	.08	.03	.06	.06	.34***
GSTR7	.29***	**.36*** **	.09	.14*	.16**	.00	-.06	-.10	.33***
SSTR2	.06	-.05	**.65*** **	.03	.00	.02	.03	.20***	.27***
SSTR3	-.04	.17***	**.75*** **	.08	-.02	.05	-.05	.06	.24***
SSTR4	.03	.21***	**.40*** **	.17**	-.01	-.04	.08	.09	.37***
SSTR5	.08	.21**	**.26*** **	.13	-.05	-.12*	.24***	.08	.40***
SSTR7	.00	.07	**.57*** **	.15**	.06	-.09*	.06	.08	.33***
PSTR2	.12	.07	.15**	**.44*** **	.02	-.06	.10	-.01	.30***
PSTR3	.15*	-.01	.12*	**.57*** **	.00	-.01	.04	.02	.34***
PSTR4	.12*	-.01	-.10*	**.62*** **	.06	.00	-.02	.22***	.26***
PSTR5	-.04	.07	.05	**.71*** **	.05	-.04	.04	.01	.32***
PSTR7	-.03	.03	.27***	**.48*** **	.14**	-.06	.10	-.03	.37***
ESTR2	-.02	-.01	-.03	-.12*	**.96*** **	-.07*	-.06	.04	.21***
ESTR3	.00	.05	.06	-.07	**.73*** **	-.07	.06	.09	.24***
ESTR4	.02	.14**	-.19***	.15**	**.65*** **	-.01	-.02	.11*	.30***
ESTR5	-.05	.13*	-.13**	.14*	**.67*** **	-.01	.11*	-.06	.34***
ESTR7	.03	-.09	.15***	.10	**.62*** **	-.04	.01	.09	.32***
LSTR2	.25***	.18**	.12**	-.11*	.20***	**.36*** **	.05	.10*	.23***
LSTR3	.20***	.04	.16***	.08	.17**	**.38*** **	.20***	-.04	.29***
LSTR4	.10*	.09	.03	.17**	.04	**.47*** **	.12	.25***	.22***
LSTR5	.03	.18***	-.04	.15**	.02	**.42*** **	.16**	.21***	.23***
LSTR7	.19***	-.03	.25***	.08	.18***	**.31*** **	.17**	.03	.30***
TMTR2	-.01*	.01	.13**	-.15**	.02	-.09*	**.74*** **	.08	.34***
TMTR3	.10	.05	-.01	-.12*	-.12*	-.14***	**.92*** **	.04	.19***
TMTR4	-.04	.02	-.05	.14*	.02	-.02	**.67*** **	.10	.31***
TMTR5	-.07	.15**	-.12**	.13**	.05	.09*	**.71*** **	.01	.25***
TMTR7	.05	-.16**	.09	.17**	.19***	.04	**.61*** **	-.11*	.34***
CSTR2	.09	-.17	.18***	-.13*	.12*	-.02	.08	**.67*** **	.28***
CSTR3	.03	.02	.10*	.04	.01	-.07*	-.09	**.85*** **	.15***

CSTR4	-.08	.11*	-.07	.18***	.03	-.04	.07	**.69*** **	.28***
CSTR5	.11	.03	-.10*	.07	.06	-.02	.16**	**.55*** **	.38***
CSTR7	.01	.05	.23***	-.01	.18**	.00	.03	**.49*** **	.34***

Note. N = 321. TW = Teamwork; GS = Goal setting; SS = Social skills; PS = Problem solving & decision making; ES = Emotional skills; LS = Leadership; TM = Time management; CS = Interpersonal communication; TR = Transfer.
*p < .05. **p < .01. ***p < .001.

Table H
Standardized factor loadings and uniqueness of Items for the 40-item B-ESEM Model.

Item	TW	GS	SS	PS	ES	LS	TM	CS	General Factor	Uniqueness
TWTR2	**.38*** **	.05	-.07	-.03	-.01	-.03	.00	.04	.61***	.42***
TWTR3	**.51*** **	.10*	.06	.04	.04	.15***	-.02	.05	.54***	.37***
TWTR4	**.40*** **	-.02	-.03	.02	-.02	-.01	-.06	-.03	.54***	.29***
TWTR5	**.42*** **	-.04	-.05	-.01	-.10	-.06	.03	-.05	.55***	.27***
TWTR7	**.35*** **	.01	.02	.03	.02	.09*	-.02	-.07	.68***	.25***
GSTR2	-.02	**.40*** **	.04	-.07	-.04	-.14**	.03	-.02	.59***	.25***
GSTR3	.03	**.47*** **	.12**	-.02	.06	.03	.08*	-.11**	.64***	.29***
GSTR4	-.02	**.49*** **	-.04	.08*	-.01	.05	.04	.01	.68***	.22***
GSTR5	.01	**.34*** **	-.08	.04	-.03	.04	.02	-.03	.69***	.31***
GSTR7	.19***	**.22*** **	.04	.07	.07	.04	-.05	-.11*	.66***	.33***
SSTR2	-.04	-.12**	**.45*** **	-.09	-.08*	.00	-.07	.09*	.64***	.28***
SSTR3	-.04	.05	**.57*** **	-.01	-.04	.06	-.07*	.02	.63***	.23***
SSTR4	-.02	.11*	**.26*** **	.08	-.08*	-.03	.02	.03	.68***	.37***
SSTR5	.07	.15**	**.22*** **	.10*	-.03	-.05	.17***	.06	.63***	.41***
SSTR7	.00	.01	**.44*** **	.05	.00	-.06	.01	.05	.65***	.33***
PSTR2	.03	.03	.06	**.24*** **	.00	-.05	.03	-.07	.67***	.28***
PSTR3	.06	-.02	.03	**.34*** **	-.05	.01	-.02	-.05	.67***	.31***
PSTR4	.03	-.02	-.15***	**.38*** **	.00	.01	-.04	.10*	.71***	.26***
PSTR5	.00	.07	.03	**.46*** **	.07	.01	.05	-.01	.64***	.33***
PSTR7	-.06	-.01	.15***	**.26*** **	.02	-.06	.02	-.06	.71***	.36***
ESTR2	-.15**	-.13**	-.16**	-.24***	**.38*** **	-.16***	-.20***	-.03	.69***	.16**
ESTR3	-.07	-.04	-.02	-.13**	**.32*** **	-.07	-.05	.05	.72***	.25***
ESTR4	-.01	.05	-.16***	.08	**.40*** **	.03	-.04	.07	.69***	.30***
ESTR5	.07	.12***	.03	.17***	**.76*** **	.14	.15***	.03	.58***	999.00
ESTR7	-.05	-.14**	.06	-.03	**.28*** **	-.04	-.08*	.05	.72***	.32***
LSTR2	.05	.02	-.03	-.19***	.00	**.31*** **	-.09*	-.04	.73***	.23***
LSTR3	.09*	-.04	.07*	-.02	.07*	**.40*** **	.05	-.08*	.70***	.28***
LSTR4	.00	-.01	-.06	.05	-.03	**.46*** **	-.01	.09**	.73***	.22***
LSTR5	-.01	.08	-.08*	.08*	.01	**.44*** **	.06	.09*	.66***	.24***
LSTR7	.05	-.10*	.11**	-.04	.02	**.30*** **	.01	-.04	.74***	.30***
TMTR2	-.05	.00	.08*	-.12**	-.02	-.06	**.42*** **	.05	.62***	.34***
TMTR3	.07	.08*	.02	-.05	-.04	-.06	**.58*** **	.05	.63***	.20***
TMTR4	-.04	.04	-.05	.10**	.01	.03	**.41*** **	.07	.68***	.31***
TMTR5	-.07	.12**	-.12**	.09*	.03	.13***	**.43*** **	-.01	.71***	.25***
TMTR7	-.03	-.13**	.00	.04	.02	.04	**.30*** **	-.10*	.69***	.33***
CSTR2	-.01	-.18***	.11**	-.16***	.04	.01	.00	**.45*** **	.61***	.27***
CSTR3	.01	-.02	.10**	.01	.04	.00	-.03	**.59*** **	.66***	.16***

CSTR4	-.08*	.05	-.07	.11**	.01	.01	.06	**.46*** **	.69***	.28***
CSTR5	.03	-.01	-.10*	.04	.01	.02	.09*	**.36*** **	.66***	.37***
CSTR7	-.05	-.03	.14***	-.06	.05	.02	-.02	**.32*** **	.70***	.34***

Note. N = 321. TW = Teamwork; GS = Goal setting; SS = Social skills; PS = Problem solving & decision making; ES = Emotional skills; LS = Leadership; TM = Time management; CS = Interpersonal communication; TR = Transfer.
*p < .05. **p < .01. ***p < .001.

Appendix A.
LSSS-TS final version along with items removed after each study.

Life Skills Scale for Sport - Transfer Scale

Directions:
Life Skills Questions: Young people have all kinds of experiences and can learn a lot from playing sport. Some of the questions below ask about the skills you may have learned through playing your MAIN sport. For these questions, please rate how much your sport has taught you to perform the skills listed.
Transfer Questions: The life skills that young people learn through sport may be transferred to other areas of life. Some of the questions below ask about the areas you may transfer the life skills to. For these questions, please rate the extent to which you transfer the life skills to each area. When answering these questions, please read back through the life skills questions if necessary.
All Questions: Please answer by circling the number to the right of each question. There are no right or wrong answers, so please answer as honestly as possible.

Teamwork **This sport has taught me to…**	**Not at all**	**A little**	**Some**	**A lot**	**Very much**
Work well within a team/ group.	1	2	3	4	5
Help another team/ group member perform a task.	1	2	3	4	5
Accept suggestions for improvement from others.	1	2	3	4	5
Work with others for the good of the team/ group.	1	2	3	4	5
Help build team/ group spirit.	1	2	3	4	5
Suggest to team/ group members how they can improve their performance.	1	2	3	4	5
Change the way I perform for the benefit of the team/ group.	1	2	3	4	5
I use these teamwork skills…	**Not at all**	**A little**	**Some**	**A lot**	**Very much**
In school/ education. [a]	1	2	3	4	5
At home. [a]	1	2	3	4	5
Within my community (e.g., when volunteering). [a]	1	2	3	4	5
In my job/ when doing chores. [a]	1	2	3	4	5
In relationships with others. [a]	1	2	3	4	5
Within my academic studies. [b]	1	2	3	4	5
When engaging with other people in my community. [b]	1	2	3	4	5
In other everyday situations. [b]	1	2	3	4	5
When interacting with friends. [c]	1	2	3	4	5
With my family. [c]	1	2	3	4	5
In other areas of my life. [c]	1	2	3	4	5

Goal Setting **This sport has taught me to…**	**Not at all**	**A little**	**Some**	**A lot**	**Very much**
Set goals so that I can stay focused on improving.	1	2	3	4	5

Set challenging goals.	1	2	3	4	5
Check progress towards my goals.	1	2	3	4	5
Set short-term goals in order to achieve long-term goals.	1	2	3	4	5
Remain committed to my goals.	1	2	3	4	5
Set goals for practice.	1	2	3	4	5
Set specific goals.	1	2	3	4	5
I use these goal setting skills…	**Not at all**	**A little**	**Some**	**A lot**	**Very much**
In school/ education. [a]	1	2	3	4	5
At home. [a]	1	2	3	4	5
Within my community (e.g., when volunteering). [a]	1	2	3	4	5
In my job/ when doing chores. [a]	1	2	3	4	5
In relationships with others. [a]	1	2	3	4	5
Within my academic studies. [b]	1	2	3	4	5
When engaging with other people in my community. [b]	1	2	3	4	5
In other everyday situations. [b]	1	2	3	4	5
When interacting with friends. [c]	1	2	3	4	5
With my family. [c]	1	2	3	4	5
In other areas of my life. [c]	1	2	3	4	5

Social Skills

This sport has taught me to…	**Not at all**	**A little**	**Some**	**A lot**	**Very much**
Start a conversation.	1	2	3	4	5
Interact in various social settings.	1	2	3	4	5
Help others without them asking for help.	1	2	3	4	5
Get involved in group activities.	1	2	3	4	5
Maintain close friendships.	1	2	3	4	5
I use these social skills…	**Not at all**	**A little**	**Some**	**A lot**	**Very much**
In school/ education. [a]	1	2	3	4	5
At home. [a]	1	2	3	4	5
Within my community (e.g., when volunteering). [a]	1	2	3	4	5
In my job/ when doing chores. [a]	1	2	3	4	5
In relationships with others. [a]	1	2	3	4	5
Within my academic studies. [b]	1	2	3	4	5

When engaging with other people in my community. [b]	1	2	3	4	5
In other everyday situations. [b]	1	2	3	4	5
When interacting with friends. [c]	1	2	3	4	5
With my family. [c]	1	2	3	4	5
In other areas of my life. [c]	1	2	3	4	5

Problem Solving & Decision Making

This sport has taught me to…	**Not at all**	**A little**	**Some**	**A lot**	**Very much**
Think carefully about a problem.	1	2	3	4	5
Compare each possible solution in order to find the best one.	1	2	3	4	5
Create as many possible solutions to a problem as possible.	1	2	3	4	5
Evaluate a solution to a problem.	1	2	3	4	5
I use these problem solving & decision making skills…	**Not at all**	**A little**	**Some**	**A lot**	**Very much**
In school/ education. [a]	1	2	3	4	5
At home. [a]	1	2	3	4	5
Within my community (e.g., when volunteering). [a]	1	2	3	4	5
In my job/ when doing chores. [a]	1	2	3	4	5
In relationships with others. [a]	1	2	3	4	5
Within my academic studies. [b]	1	2	3	4	5
When engaging with other people in my community. [b]	1	2	3	4	5
In other everyday situations. [b]	1	2	3	4	5
When interacting with friends. [c]	1	2	3	4	5
With my family. [c]	1	2	3	4	5
In other areas of my life. [c]	1	2	3	4	5

Emotional Skills

This sport has taught me to…	**Not at all**	**A little**	**Some**	**A lot**	**Very much**
Know how to deal with my emotions.	1	2	3	4	5
Use my emotions to stay focused.	1	2	3	4	5
Understand that I behave differently when emotional.	1	2	3	4	5
Notice how I feel.	1	2	3	4	5
I use these emotional skills…	**Not at all**	**A little**	**Some**	**A lot**	**Very much**

In school/ education. [a]	1	2	3	4	5
At home. [a]	1	2	3	4	5
Within my community (e.g., when volunteering). [a]	1	2	3	4	5
In my job/ when doing chores. [a]	1	2	3	4	5
In relationships with others. [a]	1	2	3	4	5
Within my academic studies. [b]	1	2	3	4	5
When engaging with other people in my community. [b]	1	2	3	4	5
In other everyday situations. [b]	1	2	3	4	5
When interacting with friends. [c]	1	2	3	4	5
With my family. [c]	1	2	3	4	5
In other areas of my life. [c]	1	2	3	4	5

Leadership

This sport has taught me to…	**Not at all**	**A little**	**Some**	**A lot**	**Very much**
Know how to positively influence a group of individuals.	1	2	3	4	5
Organise team/ group members to work together.	1	2	3	4	5
Know how to motivate others.	1	2	3	4	5
Help others solve their performance problems.	1	2	3	4	5
Consider the individual opinions of each team/ group member.	1	2	3	4	5
Be a good role model for others.	1	2	3	4	5
Set high standards for the team/ group.	1	2	3	4	5
Recognise other people's achievements.					
I use these leadership skills…	**Not at all**	**A little**	**Some**	**A lot**	**Very much**
In school/ education. [a]	1	2	3	4	5
At home. [a]	1	2	3	4	5
Within my community (e.g., when volunteering). [a]	1	2	3	4	5
In my job/ when doing chores. [a]	1	2	3	4	5
In relationships with others. [a]	1	2	3	4	5
Within my academic studies. [b]	1	2	3	4	5
When engaging with other people in my community. [b]	1	2	3	4	5
In other everyday situations. [b]	1	2	3	4	5
When interacting with friends. [c]	1	2	3	4	5
With my family. [c]	1	2	3	4	5

In other areas of my life. [c]	1	2	3	4	5

Time Management

This sport has taught me to…	**Not at all**	**A little**	**Some**	**A lot**	**Very much**
Manage my time well.	1	2	3	4	5
Assess how much time I spend on various activities.	1	2	3	4	5
Control how I use my time.	1	2	3	4	5
Set goals so that I use my time effectively.	1	2	3	4	5
I use these time management skills…	**Not at all**	**A little**	**Some**	**A lot**	**Very much**
In school/ education. [a]	1	2	3	4	5
At home. [a]	1	2	3	4	5
Within my community (e.g., when volunteering). [a]	1	2	3	4	5
In my job/ when doing chores. [a]	1	2	3	4	5
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Within my academic studies. [b]	1	2	3	4	5
When engaging with other people in my community. [b]	1	2	3	4	5
In other everyday situations. [b]	1	2	3	4	5
When interacting with friends. [c]	1	2	3	4	5
With my family. [c]	1	2	3	4	5
In other areas of my life. [c]	1	2	3	4	5

Communication

This sport has taught me to…	**Not at all**	**A little**	**Some**	**A lot**	**Very much**
Speak clearly to others.	1	2	3	4	5
Pay attention to what someone is saying.	1	2	3	4	5
Pay attention to people's body language.	1	2	3	4	5
Communicate well with others.	1	2	3	4	5
I use these communication skills…	**Not at all**	**A little**	**Some**	**A lot**	**Very much**
In school/ education. [a]	1	2	3	4	5
At home. [a]	1	2	3	4	5
Within my community (e.g., when volunteering). [a]	1	2	3	4	5
In my job/ when doing chores. [a]	1	2	3	4	5
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Within my academic studies. [b]	1	2	3	4	5

When engaging with other people in my community. [b]	1	2	3	4	5
In other everyday situations. [b]	1	2	3	4	5
When interacting with friends. [c]	1	2	3	4	5
With my family. [c]	1	2	3	4	5
In other areas of my life. [c]	1	2	3	4	5

Thank you for completing this survey.

Note. [a]Item was retained in the final version of the scale; [b]Item was removed during Study 1; [c]Item was removed during Study 2.