ORIGINAL ARTICLE

Taekwondo instructors' life skills teaching: a key factor in life skills development and transfer of youth trainees

Authors' Contribution:
A Study Design
B Data Collection
C Statistical Analysis
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E Funds Collection

Yong-Quan Shen [1ACD], **Dong-Su Kim** [2ABC], **Junsu Bae** [3BD]

[1] Department of Physical education, Yancheng Polytechnic College of China, Yancheng, China
[2] College of Basic Education, Dong-A University, Busan, Korea
[3] Department of Taekwondo, Yongin University, Yongin, Korea

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Abstract

Background & Study Aim: The role of an instructor in taekwondo training is very important, especially regarding the level of life skills development and transfer in youth trainees, which can vary depending on the instructor's level of life skills teaching. However, there is no research found that statistically verifies the impact of taekwondo instructors' life skills teaching in Korea. Therefore, this study aim is knowledge about the structural relationship among the explicit and implicit life skills teachings of taekwondo instructors, trainees' life skills development, and transfer.

Material & Methods: The study was based on data from 363 youth trainees (Mage = 18.26 ±0.87) who practice taekwondo in South Korea, and the results were derived through descriptive statistics, correlation analysis, and a structural equation model.

Results: The results of the structural model analysis showed that both implicit and explicit teachings had positive effects on life skills. However, while explicit teaching had a positive effect on transfer, implicit teaching did not have a statistically significant effect. Meanwhile, it was confirmed that there was a positive relationship between life skills development and transfer of trainees.

Conclusions: This study suggests that life skills teaching by taekwondo instructors is important for the development of trainees' life skills, and that explicit teaching is necessary for life skills to be transferred to their daily lives.

Keywords: martial arts education • positive youth development • social skills • well-being • youth sport

Conflict of interest: Authors have declared that no competing interest exists

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Author's address: Dong-Su Kim, College of Basic Education, Dong-A University, Busan, South Korea; e-mail: dongsus@naver.com

Skill transfer – *noun* the act of learning a new skill using aspects of other skills that have already been mastered [47].

Olympic Games, Olympics – *plural noun* a large-scale international sports contest intended to promote international goodwill, held every four years since 1896 in different cities around the world [47].

Black belt – *noun* **1.** A belt worn by someone who has reached a high level of skill in a martial art such as judo or taekwondo **2.** someone at a high level of skill in a martial art, entitled to wear a belt that is black [47].

INTRODUCTION

Recently, the Maldives joined as the 212th member country of the World Taekwondo (WT). With this, the WT now has the fourth highest number of member countries among international sports federations, following table tennis (227 countries), volleyball (222 countries), and athletics (214 countries), tied with basketball [1]. The globalization of taekwondo was possible not only because of the development of Olympic Game but also because of educational effects such as the development of morality and sociality of trainees [2]. Unlike general sports, taekwondo focuses on the behaviour and mental growth of trainees through the training process rather than only the importance of participation in exercise itself [3]. Moreover, in addition to the physical and psychological benefits of taekwondo training, it has also been widely used to develop the mental strength and character of trainees [4]. Taekwondo has placed an important value on having a positive impact on the behaviour and mentality of trainees through the training process [5].

Taekwondo training helps maintain a balanced development of body and mind by repeatedly mastering skills. In addition, through physical training, taekwondo pursues the development of inner value of an individual and the development of sociality by experiencing etiquette, concentration, and confidence [6]. Taekwondo is especially popular among adolescents for this reason. Because taekwondo training pursues a practice-oriented approach such as developing life skills – behavioural, cognitive, and psychological skills that are necessary for adolescents to successfully live their lives – beyond compensating for the insufficient physical activity of adolescents, and not only supplements their lack of physical activity but also develops practical skills through training [7].

Life skills are the ability used to effectively cope with various problems that humans face in their lives. Life skills are typically used to successfully complete daily tasks and are meaningfully utilized in school, workplace, home, and community [8]. The major factors in life skills are goal setting, interpersonal relationship, decision making, effective communication, problem solving, self-awareness, creative thinking, critical thinking, empathy, emotional regulation, stress-coping, etc. [9].

Pierce et al. [10] defined life skills as the ability to develop into an individual asset by developing psychosocial skills, knowledge, personality, and identity through sports. It is emphasized that one or more assets internalized by learning these are applied to experience one's own changes, and that the asset goes beyond the originally learned context, just as it transfers from sports to life. This is closely related to the life skills transfer, in which trainees develop mental strength by acquiring various life skills in a taekwondo environment, but also utilize it as an influential means in other environments such as homes, schools, and communities [11].

Pierce et al. [10] defined life skills transfer as 'a process in which an individual creates a change in life by developing and internalizing various internal assets in sports and applying life skills to life outside of sports'. Adolescents gain various experiences in environments such as school, sports, and home in their lives. This model focuses on the sports environment. The sports environment interacts with three factors: inherent demands to sports (e.g., a positive competitive climate), program design (e.g., life skill instruction), and coach characteristics and coaching strategies (e.g., types of instruction and communication) [12]. Sports programs that properly consider these three factors help adolescents develop their life skills. From this point on, the process of developing adolescents' life skill moves from a learning environment to a transfer environment [13]. The possibilities of adolescents' life skill transfer depend on how similar their lives are to sports, how much they are guaranteed to use the life skill, and how much others support and reward the life skill transfer [10, 14].

Meanwhile, Jacobs and Wright [15] argued that in order to understand life skills transfer process in detail, attention must be paid to an individual's cognitive process. They proposed the transfer model, which focuses on the cognitive process of sports participants based on the transformative experience framework presented by Pugh et al. [16]. The taekwondo environment in which the life skill is trained is basically part of the skill-learning school (everyday life) and cannot be separated from each other, according to their transfer model [10]. Adolescents in these circumstances already have some internal and external assets. Typical examples of external

assets include parents, siblings, teachers, friends, coaches, and masters [17]. Based on recent research, more attention needs to be paid to the capabilities of instructors (masters) who directly interact with trainees [18].

In general, taekwondo trainees acquire various social and psychological values in their interactions with their instructor. However, the interaction between the instructor and trainees varies depending on the characteristics and purpose of their taekwondo practice. Their instructor plays an important role as an assistant for adolescent trainees' life skills development and transfer. Taking advantage of the nature of taekwondo skill-building, instructor is in the position to teach taekwondo skills and life skills at the same time [19]. The instructor serves as an intermediary for trainees to learn the inherent characteristics of taekwondo practitioners: colleagues, studio rules, and how to interact with various people in competition. Basically, the instructor, is one of the major people who spend a lot of time with the trainees and is in the position to know trainee in detail [20].

There are, however, a few points of controversy in view of life skills transfer research. The main controversy is whether adolescents can transfer their life skills learned from coaches smoothly to other areas of life and whether life skill transfer can be automatically triggered just by the coach instructing the skills [21]. Camiré [8] questioned the assumption that life skills will produce universal results that promote individual and sociality or automatically trigger life skills transfer in sports. In other words, the sports environment and the outside environment cannot be equated, the opportunity or situation of utilizing life skills cannot coincide in both environments, and something else is needed for life skills to be induced into action even in a relatively more complex social environment than sports. Jacobs and Wright [15] and Camiré [8] argue that life skill learning is not universal and automatic, but rather contextual and intentional, and careful attention should also be paid to how this happens. Therefore, a structural and systematic approach is needed as an approach that affects adolescents' life skill development.

Bean et al. [22] proposed 6 stages of life skill coaching to embody these issues. They put the key issue of transfer on the systemic and deliberation of the instructors. Assuming that a coach can create a safe sports environment and instruct skills in a positive climate (stage 1 and 2). This step is named implicit approach. Typical examples include government policy, community support, and the climate of the studio. For example, community can encourage local residents to participate in sports through sports facility expansion projects and in still awareness of exercise and healthy life. Thanks to this support, adolescents can naturally participate in sports and gain opportunities for implicit development by enjoying sports in safe facilities. In addition, as instructors teach skills, they can deliberately and intentionally practice life skills discussion (stage 3), life skills practice (stage 4), transfer discussion (stage 5), and transfer practice (stage 6) to trainees. These steps are named the explicit approach. A typical example is the participation of trainees in a systematically designed life skills program. They get a chance to practice for various life skills development and transfer by participating in systematic taekwondo programs. The life skills developed in this way are more likely to transfer to life than to implicit environment [22, 8].

However, transfer is limited in that it must appear within the boundaries of sports and outside sports. Gordon and Doyle [23] described these boundaries and distances by dividing them into near transfers (e.g., sports environment) and far transfers (e.g., outside sports). Near transfer appears through experience in the climate of the training gym and near transfer can appear easily than a far transfer.

On the contrary to this, far transfer seeks to create life skills so that the values experienced in sports can be utilized in life, therefore creating more encouraging situations to be more positive in both sports and non-sporting environments. In general, the effect is greater if far transfer is followed by practice than near transfer. But far transfer, which must appear in real life, is more difficult to synchronize with behaviour than near transfer [15]. This is because at far transfer, generalizations to transfer high-level thinking skills, meta-cognition, and learned concepts to life are more difficult [14, 8].

Present study

According to life skills coaching model, differences may arise in transfer effect depending on

instructor's approach to life skills instruction [22]. An instructor not only makes trainees understand and practice their life skills, but also devotes an explicit approach for transfer into their lives. Similarly, other researchers state that a high level of explicit instruction strategy can increase the possibility of transfer as well as the development of trainees' life skills [24, 8]. Sports instructors can promote adolescents' life skills and transfer by deliberately and intentionally instructing life skills [25, 10]. An instructor's explicit teaching can enable adolescents to develop life skills and transfer their values to life through taekwondo training [26]. According to the Life Development Intervention (LDI) and Basic Psychological Needs Theory (BNT) life skills model proposed by Hodge et al. [27], explicit interventions by sports coaches have a positive impact not only on the participants' life skills development but also on their transfer.

Alternatively, some researchers argue that implicit approaches will also be effective for the development of life skills and transfer. Jones and Lavallee [28] argued that coaches' implicit approach can also contribute to positive youth development (PYD). Chinkov and Holt [29] reported that participation in sports can promote the life skills development such as adolescents' respect, patience, confidence, etc. If adolescents participating in sports are positively aware of coaching behaviour, it is expected to have a positive effect on their life skills and transfer [30]. In addition, Jin et al. [31] viewed the psychosocial climate as a variable in predicting sports life skills and transfer. They argued that the instructor's caring and a motivational climate not only promote the life skills development of student athletes, but also help it transfer to life. However, Bean et al. [22] noted that it is difficult to expect consistent results or outstanding effects on life skills development and transfer from implicit teaching. The positive impact of an implicit approach on transfer remains controversial from the perspective of both near and far transfer [23]. Despite the growing interest in the instructor's role and transfer [10], the reality is that most of the implicit and explicit approaches remain at the level of model development [22, 8]. Moreover, the claim that it will affect the life skills development depending on the coaching or type of instructor is mostly qualitative research [32, 33], so quantitative research is needed to statistically clarify the relationship. In addition, as most of the research on transfer in Korea is focused on elite sports, it is necessary to expand the research into daily sports.

Therefore, this study aim is knowledge about the structural relationship among the explicit and implicit life skills teachings of taekwondo instructors, trainees' life skills development, and transfer.

Presenting the model of this study based on the aforementioned preceding research and research trends is the same as Figure 1.

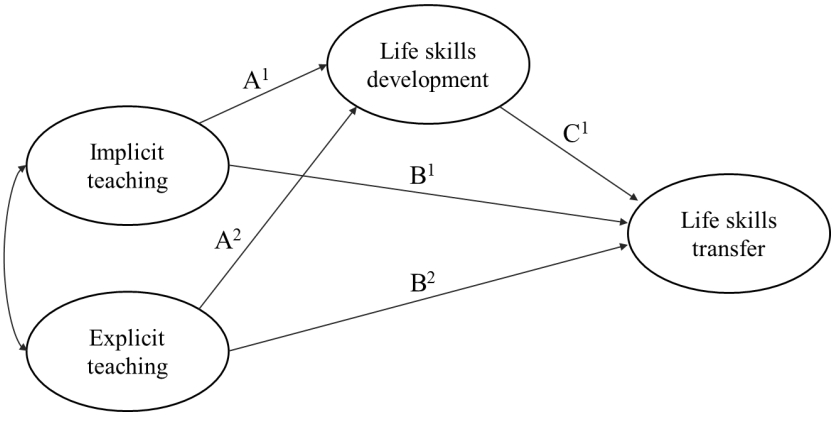

Figure 1. Hypothesized model of relations among life skills teaching, life skills development, and transfer.

Note. **A**[1-2] paths represent the relationship between life skills teaching (implicit and explicit teaching) and life skills development; **B**[1-2] paths represent the relationship between life skills teaching (implicit and explicit teaching) and life skills transfer; **C**[1] path represents the relationship between life skills development and transfer.

MATERIAL AND METHODS

Participants

In this study, 380 participants were selected using purposive sampling based on taekwondo participants in Korean high schools. The participants were trainees of at least first-degree or higher, who practiced taekwondo after school. Taekwondo training was mainly conducted more than 3 times a week and for more than 1 hour. Based on the collected data, 17 responses deemed inappropriate, due to missing information, for statistical processing were excluded. Data of 363 participants (M_{age} =18.26 ±0.87) were used for statistical processing. There were 267 male students (73.5%) and 96 female students (26.5%). There were 102 students in the 1st grade (28.1%), 66 students in the 2nd grade (18.2%), and 195 students in the 3rd grade (53.7%). 82 (22.6%) participants were the first-degree black belt, 125 (34.4%) participants in the second-degree black belt, 94 (25.9%) participants in the third-degree black belt, and 62 (17.1%) participants in the fourth-degree black belt.

MEASURES

Coaching Life Skills in Sport Questionnaire

To measure the life skills teaching of sports coaches, the *Coaching Life Skills in Sport Questionnaire* (CLSS-Q) developed by Camiré et al. [19] was used. The questionnaire was translated into Korean by Bae and Lim [34], and its reliability and validity were verified. In this study, based on the model of Bean et al. [22], 3 items of safety environment (SE) and 2 items of caring climate (CC) were constructed as implicit teaching, and 5 items of understanding of life skills (ULS), 4 items of practice of life skills (PLS), 5 items of understanding of life skills transfer (ULST), 3 items of practice of life skills transfer (PLST) were constructed as explicit teaching. Therefore, the CLSS-Q consists of 22 items with 6 factors. Each question was organized on a 5-point Likert scale (1 point 'not at all' ~ 5 points 'very much'). The validity of the measurement tool was conducted by confirmatory factor analysis (CFA). As a result, x^2 / *df* = 3.01 (x^2 = 585.033 / *df* = 194), GFI (Goodness of Fit Index) = 0.860, IFI (Incremental Fit Index) = 0.927, TLI (Tucker-Lewis Index) = 0.913, and RMSEA (Root Mean Square Error of Approximation) = 0.079 were shown. In all goodness of fits, the threshold proposed by Kline [35] were exceeded.

Life Skills Scale for Sport

To measure trainees' life skills, the Life Skills Sale for Sport (LSSS) developed by Cronin and Allen [36] was used. This measure was translated into Korean by Lim et al. [37], and its reliability and validity were verified. In this study, it consisted of 4 factors and 16 questions, such as time management, communication, emotional management, and goal setting. Each question was organized on a 5-point Likert scale (1 point 'not at all' ~ 5 points 'very much'). As for the validity, confirmatory factor analysis was implemented, showing the following results: x^2 / *df* = 2.86 (x^2 = 137.652 / *df* = 48), GFI = 0.952, IFI = 0.952, TLI = 0.934, and RMSEA = 0.076. In all goodness of fits, the threshold proposed by Kline [35] were exceeded.

Life Skills Transfer Survey

The *Life Skills Transfer Survey* (LSTS) [38] was used to measure trainees' life skills transfer. This survey was translated into Korean and tested reliability and validity by Lim et al. [39]. The factors and the multi-collinearity of life skills measurement tool were considered and consisted of 4 factors and 21 questions, such as helping each other, health management, solving problems, and emotional control. Each question was organized on a 5-point Likert scale (1 point 'not at all' ~ 5 points 'very much'). Confirmatory factor analysis showed the following results: x^2 / *df* = 2.70 (x^2 = 259.202 / *df* = 96), GFI = 0.912, IFI = 0.931, TLI = 0.927, and RMSEA = 0.078 were shown. In all goodness of fits, the threshold proposed by Kline [35] was exceeded.

Research procedure

Each taekwondo school was either contacted directly or through the local governing body, Korea Taekwondo Association to seek their cooperation. Data collection process followed the social distancing guidelines due to the ongoing COVID-19 pandemic. The researcher visited the taekwondo school in person and provided a full explanation of the research ethics to the participants in accordance with the Institutional Review Board (IRB) guidelines. After obtaining their consent to participate, the participants were asked to complete self-evaluation questionnaires. In cases where in-person access was not possible due to quarantine regulations, the questionnaires were administered online, after providing an overview of the data collection process, including

the purpose of the study, research ethics, consent procedures, and instructions for questionnaire completion.

Data processing and statistical analyses

The data collected from this study were statistically processed in IBM SPSS Amos for Windows, ver. 23.0 (IBM SPSS, Chicago, USA). First, descriptive statistics: mean (*M*), standard deviation (*SD* or ±), skewness and kurtosis; were implemented to delete unnecessary data and check the normal distribution. The relationship between major variables was examined through Pearson correlation (*r*) analysis. The fit of the model was determined through the analysis of the Structural Equation Model (SEM). Various indexes such as x^2 / *df*, GFI, IFI, TLI, CFI, and RMSEA were used to measure the goodness of fits of the model to confirm concordance with the criterion, proposed by Kline [35]. Statistical significance of this study was set at $p<0.05$. Bowen and Guo [40] recommends confirming the multi-collinearity values between variables through correlation analysis. In general, the correlation coefficient should not exceed 0.80.

RESULTS

The overall average (*M*) was 4.04~4.43, the overall *SD* was 0.41~0.83, the skewness was −0.44~−0.22, and the kurtosis was −1.00~2.52. More specifically, the descriptive statistics of each potential variable showed that explicit teaching was *M* = 4.10~4.25 ±0.41~0.66, skewness = −0.32~−0.59, and kurtosis = −0.15~-1.00. Implicit teaching was *M* = 4.31~4.43 ±0.52~.63, skewness= −0.63~−0.65, and kurtosis = −0.18~−0.21. Life skills was *M* = 4.04~4.39 ±0.58~0.69, skewness = −0.37~−0.60, and kurtosis = −0.20~.51. Life skills transfer was *M* = 4.04~4.19 ±0.64~0.83, skewness = −0.37~−0.60, and kurtosis =−0.20~−0.51.

It was found that there was a correlation between all variables (r = 0.135~0.693). Among them, the correlation between GS and CM (r = 0.693) was the highest. And the correlation value between HET and PLST (r = 0.135) was found to be the lowest. The instructor's implicit teaching variables have been shown to have a static correlation (r = 0.172~0.547) with both life skills and transfer variables. Among them, there was the highest correlation (r = 0.428) between CC and CM, and there was the lowest correlation (r = 0.172) between SE and HET. The instructor's explicit teaching variables have been shown to have a static correlation (r = 0.135~0.488) with both life skills and transfer variables. Among them, there was the highest correlation (r = 0.488) between ULS and TM, and there was the lowest correlation (r = 0.135) between PLST and HET. Next, it was found to have a static correlation (r = 0.179~0.632) with both trainees' life skills and transfer sub-variables (Table 1).

In this study, the correlation coefficient between all variables was found to meet the criterion does not exceed 0.80, so this data was used to analyse the structural equation model.

Structural models

The result of the goodness fit of the structural equation model is the same as Table 2. As a result, x^2 / *df* was 2.81 (x^2 =199.668 / *df* = 71), GFI was 0.927, IFI was 0.950, TLI was 0.936, CFI was 0.950, and RMSEA was 0.071.

By checking the path coefficient for the model set in this study, the statistical significance of the relationship between potential variables was confirmed (Table 3). The path of $<A^1>$ and $<A^2>$ mean the relationship between the type of life skill teaching and life skills. The two types of life skills teaching showed a statistically significant impact on life skills. In particular, explicit teaching has the greatest impact on life skills (β = 0.497, $p<0.001$). The path between $<B^1>$ and $<B^2>$ is the relationship between implicit and explicit teaching and transfer. Of these, implicit teaching was not statistically significant with transfer (β = −0.132, $p>0.05$), but explicit teaching was statistically significant with transfer (β = 0.286, $p<0.001$). Finally, $<C^1>$ shows the relationship between life skills and transfer. This path was statistically significant (β = 0.745, $p<0.001$). Together, the structural equation model set in this study was found to be a good fit and had statistically significant values in four of the paths between the five variables. If the standardized regression coefficient (β) for the model of this study is presented in a picture, it is the same as Figure 2.

Table 1. Descriptive statistics and Pearson's correlation.

Factor	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. SE	1													
2. CC	0.662**	1												
3. ULS	0.476**	0.547**	1											
4. PLS	0.405**	0.415**	0.628**	1										
5. ULST	0.425**	0.461**	0.682**	0.606**	1									
6. PLST	0.310**	0.278**	0.445**	0.462**	0.555**	1								
7. TM	0.361**	0.379**	0.425**	0.387**	0.403**	0.237**	1							
8. CM	0.391**	0.428**	0.488**	0.463**	0.470**	0.388**	0.673**	1						
9. EM	0.337**	0.326**	0.433**	0.413**	0.345**	0.293**	0.533**	0.575**	1					
10. GS	0.363**	0.338**	0.409**	0.390**	0.386**	0.278**	0.680**	0.693**	0.653**	1				
11. ADT	0.280**	0.254**	0.419**	0.446**	0.383**	0.232**	0.433**	0.498**	0.414**	0.520**	1			
12. HET	0.172**	0.192**	0.242**	0.202**	0.204**	0.135*	0.312**	0.343**	0.179**	0.334**	0.365**	1		
13. PTT	0.290**	0.307**	0.413**	0.388**	0.396**	0.348**	0.500**	0.564**	0.632**	0.590**	0.430**	0.274**	1	
14. RCT	0.307**	0.289**	0.430**	0.412**	0.354**	0.241**	0.426**	0.535**	0.424**	0.493**	0.649**	0.288**	0.520**	1
M	4.43	4.31	4.25	4.10	4.17	4.11	4.39	4.31	4.04	4.28	4.12	4.19	4.04	4.09
SD	0.52	0.63	0.41	0.65	0.66	0.61	0.58	0.59	0.69	0.58	0.68	0.83	0.64	0.68

*$p<0.05$, **$p<0.01$

Note. Implicit teaching (**1.SE** safety environment, **2.CC** caring climate); *explicit teaching* (**3.ULS** understanding of LS, **4.PLS** practice of LS, **5.ULST** understanding of LST, **6.PLST** practice of LST); *life skills* (**7.TM** time management, **8.CM** communication, **9.EM** emotional management, **10.GS** goal setting); *life skills transfer* (**11.ADT** appreciating diversity, **12.HET** help each other, **13.PTT** positive thinking, **14.RCT** resolving conflict). **LS** life skills; **LST** life skills transfer.

Table 2. Goodness-of-fit indices of structural equation modelling (χ^2 chi-squared distribution; ***df*** degrees of freedom).

Indicator	χ^2 / *df*	GFI	IFI	TLI	CFI	RMSEA
Fit index	199.668 / 71 = 2.41	0.927	0.950	0.936	0.950	0.710
Reference value	under 3	over 0.9	over 0.9	over 0.9	over 0.9	under 0.8

Note. **GFI** Goodness of Fit Index; **IFI** Incremental Fit Index; **TLI** Tucker-Lewis Index; **CFI** Comparative Fit Index; **RMSEA** Root Mean Square Error of Approximation.

Table 3. Standardized and unstandardized estimates, standard error (S.E.), and p-value within the model (***β*** standardized regression coefficient; *t* Student's *t*-distribution).

Paths	Dependence		Independence	Estimate	*β*	S.E.	*t*
relationship of IT, ET, and LS							
A^1	life skills	←	IT	0.257	0.212	0.099	**2.59****
A^2	life skills	←	ET	0.678	0.497	0.121	**5.63*****
relationship of IT, ET, and LST							
B^1	LST	←	IT	−0.161	−0.132	0.090	−1.78
B^2	LST	←	ET	0.392	0.286	0.113	**3.47*****
relationship of LS and LST							
C^1	LST	←	IT	0.748	0.745	0.076	**9.89*****

Note. **IT** implicit teaching; **ET** explicit teaching; **LS** life skills; **LST** life skills transfer.
**$p<0.01$, ***$p<0.001$

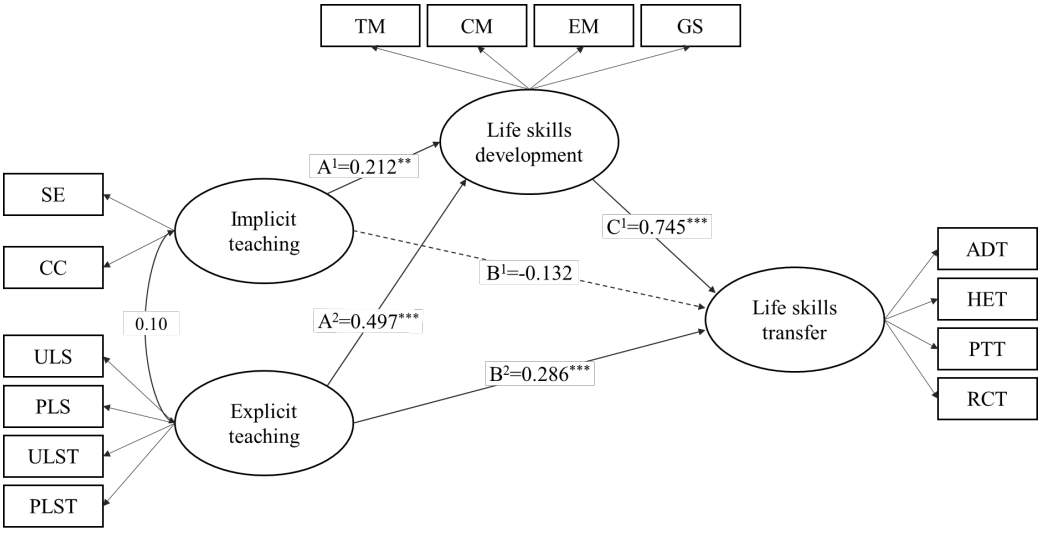

Figure 2. Standardized estimates of the structural model (abbreviation names see Table 1).

DISCUSSION

Each goodness-of-fit index followed the baseline of the structural equation model proposed by Kline [35]. According to Kline [35], it is judged to be a good fit when x^2 / *df* is less than 3, IFI, TLI and CFI is 0.90 or higher, and RMSEA is less than 0.80. As a result of comparing the calculated index with the criterion, it was found that all figures had the value of good fit. Therefore, as the explicit and implicit teaching of taekwondo instructor, it was judged that the research model for life skills development and transfer was suitable.

Taekwondo instructor's implicit and explicit teaching showed to have a statistically significant impact on life skills development. On the other hand, while explicit teaching was found to have a statistically significant impact on life skills transfer, implicit teaching did not demonstrate a statistically significant impact on transfer. Finally, it was found that life skills development showed to have a statistically significant effect on transfer.

The results of these studies support the research that taekwondo is effective in developing social skills, such as life skills [41], that acquiring life skills should be contextual and intentional [15, 8], and that the planned teaching of life skills can affect transfer [25, 10]. While the sports environment can universally and automatically affect life skills development, it is also supported by the life skills transfer model of Bean et al. [22], which states that explicit approach is more important than implicit approach if this is to affect life beyond sports. In particular, transfer has to go back and forth between the boundaries of an environment outside of sports and sports, adding persuasion to the argument that far transfer, which is outside of sports, needs explicit teaching [23].

Therefore, this study supports the claims of the researchers who have presented studies and models that have mentioned that the influence of implicit and explicit teaching on life skills may appear differently. And it is meaningful as it has provided objective and empirical information to the researcher who claims that it has different impacts on life skill and transfer according to teaching type. Moreover, the fact that it can have other effects on near and far transfer depending on the life skills teaching type (i.e., implicit and explicit) is significant in that it not only participates in sports, but also reveals the need for intentional and systematic teaching and approach that can connect from training in the gym to life.

The main implications are as follows. Holt et al. [42] meta-analysed 63 studies related to sports life skills. Based on this, they presented the 'Positive Youth Development (PYD) model through sports'. According to this model based on ecological system theory [43], adolescents

interact with distal ecological system such as community, policy, culture, etc. In a sports environment, coaches, instructors, colleagues, and parents form a motivational climate for PYD, allowing adolescents to interact and grow up in a positive social environment.

The role of an instructor is very important, especially in the sports. There are three main reasons why the role of instructors in the life skills development and transfer of sports participants are important [19]. First, taekwondo is an activity with an inherent characteristic of skill-building, the instructor is in a position to teach taekwondo skills and life skills at the same time. Second, one of the inherent characteristics of taekwondo is that trainees learn how to interact with various people, including colleagues, seniors, competitors, referees, etc., and the master serves as a mediator between them. Third, in taekwondo, the instructor spends a lot of time with trainees, placing them in an ideal position to understand the personal situations of the trainees (e.g., home environment, etc.) [31].

Given the role of the above taekwondo instructor, it can be seen that instructor is in an important position for the life skills development and transfer of trainees. Indeed, Kim [26] reported that the explicit teaching of taekwondo instructor has a positive impact on life skills development and transfer in trainees. Instructors were divided into implicit (stage 1 and 2) and explicit (stage 3-6) teaching style according to the high and low intention and their system of life skills teaching. Instructors who take an implicit approach can contribute to life skill development to some extent by emphasizing skill teaching and creating caring environment, but it cannot be assured that it reaches transfer [26]. Camiré [8] stressed that in order for life skills to spread to an environment outside of sports, the coach needs to make another effort with skill teaching. In other words, it is important for the instructor not only to create a safe sports environment and teach skills, but also to provide trainees with opportunities to understand and practice their life skills [44].

This study found that only the instructor's explicit teaching had a significant impact on transfer, which supports the arguments of Bean et al. [22] and Camiré [8]. The study results offer valuable insights to support the claims of previous research that argue that participation in sports can result in natural development and transfer of life skills [28, 29]. Implying that transfer is more likely to appear from explicit than on implicit teaching style [8] which is in turn further supported by the transfer model of Jacobs and Wright [15]. They highlight the importance in the cognitive process for transfer to understand the transfer process in detail. Reasoning that ultimately, the transfer to a different environment from learning life skills appears as an action through an individual's cognitive processes. Therefore, in the transfer process, a combination of experience and cognition is important. According to Jacobs and Wright [15], the process of cognitive cohesion is followed by practice, being the application of life skills in non-sport settings. To adequately describe the development and transfer of life skill and support this hypothesis, a complex cognitive process must be described.

For the situation of adolescents participating in school club sports develop self-control skills by learning patience and persistence. An example would be a student had a quarrel with a friend at school and handled the conflict smoothly by controlling his emotions well. At first glance, it can be understood that this adolescent has transferred the self-control skills learned from sports to school. However, it cannot be concluded that the reason why the student was able to resolve the conflict at school was because he learned self-control skills in sports. Such an assumption is illogical. Because there may be other reasons why this youth was able to cope with the conflict.

Meanwhile, the results of this study provide meaningful insights to the perspective of near and far transfer of Gordon and Doyle [23]. The pros of close transfer are that it can promote automatic learning as the experience is repeated. The sports coach can teach self-control to players by allowing them to discuss instances where they have lost self-control and find ways to apply self-control during matches and practice. However, to use these skills outside of sports, deliberate practice and generalization are required. This is because choosing the right option is essential in sports situations as well as in different environments. Far transfer, which should appear in real life, is more difficult to synchronize with behaviour than near transfer. This is because far

transfer is more difficult to generalize to transfer high-level thinking skills, meta-cognition, and learned concepts to life.

Instructors implement humanistic education by connecting skills and life skills while teaching taekwondo. Sports coaches also try to facilitate life skills teaching in the field. These efforts are possible when the instructor's philosophy, intentions, and actual actions on life skills teaching coincide [32]. Bean and Forneris [45] compared and analysed: (a) sports programs where instructors intentionally teach life skills, (b) leadership programs that are not sports but teach life skills, and (c) sports programs where instructors do not teach life skills at all. As a result, adolescents who participate in programs (sports life skills programs and leadership programs) intentionally planned by instructors to teach life skills have more positive experiences than adolescents who participated in non-teach life skills sports program. Their research [32, 44] illustrates how important the instructor's intentional efforts to develop and transfer life skills are.

In reality, however, sports instructors, including taekwondo instructors, tend to not know what they intend and what they teach [32]. In fact, McCallister et al. [46] interviewed 22 adolescent softball and baseball coaches to see how they were perceiving life skills in sports. The coaches believed it was important to teach life skills through sports, but they did not feel much need for the coach's direct intervention in the development of participants' life skills. Moreover, the coaches had a hard time explaining how they taught life skills. This highlights how instructors should check their planning of teaching life skills with clear intentions.

In this study, although evidence was found that the instructor's explicit teaching has a positive impact on life skills and transfer, there are no specific examples provided of how the taekwondo master implements intentional teaching in the field. Similarly, the taekwondo instructor transfers the value of taekwondo to trainees through apprenticeship education. Case studies on this, need to be followed by research on the form of intentional teaching in taekwondo. In addition, evidence needs to be found about the process in which taekwondo training has a positive impact on the development of sociality and its value for life. Above all, to determine the transfer system of taekwondo compared to other sports, evidence of an explicit approach is necessary. Therefore, follow-up studies, should include the details about the process on the effect of taekwondo training, providing a ground theory for intentional and planned teaching styles for more effective transfer of life skills.

CONCLUSIONS

The following conclusions were drawn based on the results of identifying the relationship between the explicit and implicit life skills teaching of taekwondo instructors and the trainees' development and transfer of life skills. First, the instructor's explicit and implicit teaching had a positive impact on trainees' life skills. Second, explicit teaching of the instructor had a positive impact on the transfer of the trainees' life skills, but implicit teaching did not have a significant impact. Third, the trainees' life skills had a positive impact on transfer. Both implicit teaching and explicit teaching of taekwondo instructors act as important variables for trainees to develop their life skills within the taekwondo. However, in order for life skills developed in taekwondo to transfer to everyday life, explicit teaching is more effective than implicit teaching.

Future direction

The suggestions for follow-up research are as follows. First, this study verified how the instructor's type of life skills teaching (i.e., explicit and implicit) relates to the trainee's life skills development and transfer. However, it is important to look at the identification of 'intention' ahead of the life skills teaching type of instructors and the consistency of intention and behaviour. These results are expected to vary depending on whether the instructor's intentions and actions on life skills coincide or not. Therefore, subsequent research needs to see how the differences between the instructor's intentions for life skills teaching affects the actual behaviour.

Second, if this study is mainly aimed at revealing the structural relationship between variables, it is necessary to clarify what role the trainee's life skills development plays in the relationship between instructor's life skills teaching and transfer. Life skill is a very important moderating

variable in the relationship between the actual role of instructor and transfer. Therefore, research on the mediating or moderating effects of this needs to be conducted. Furthermore, research is necessary to present an expanded research model by identifying the mediating and moderating effects by adding more variables in addition to the variable of the trainee's life skills development.

Third, taekwondo makes good use of its unique cultural aspects educationally. For example, it emphasizes 'etiquette' and 'filial duty' and forms a culture where polite behaviour can be done in the studio. These cultural characteristics form the implicit teaching, which are the foundation for life skills development and transfer. In other words, the true effect of explicit teaching can only be expressed when a desirable environment is established, and a system is formed [22]. Therefore, in follow-up studies, it is necessary to check what implicit factors in taekwondo's unique culture are effective in life skills development and transfer without direct guidelines or teaching.

Finally, the assumption that practicing taekwondo makes the body healthy has been proven through a number of scientific evidence, but there are very few studies that logically explain or prove from a psychological perspective that the life skills learned in taekwondo transfer to life. Jacobs and Wright [15] noted that a number of studies do not pay enough attention to this in adolescent development programs through sports, although 'cognition' and 'perception' are key processes for life skill transfer. Therefore, research should be conducted to better understand when, how, and why the trainees' life skill transfer appears and what changes occur in their perception and cognitive process.

HIGHLIGHTS

Implicit and explicit teaching are important for the development of life skills in taekwondo trainees.

Using explicit teaching rather than implicit teaching is crucial for the transfer of life skills in trainees.

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