

## Effectiveness of migration and human rights education applying the ARCS model among nursing students

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**Abstract:** This study aimed to evaluate the effectiveness of the Migration and Human Rights Education Applying the ARCS model (MHREAM) program among nursing students. A quasi-experimental, one-group, pretest-posttest design was used with 23 nursing students (20 females, 3 males). The MHREAM intervention incorporated teaching and learning strategies to enhance attention, relevance, confidence, and satisfaction. The program was conducted weekly over 14 weeks, with each session lasting 75 minutes. The study measured motivation toward instructional materials and learning outcomes, including human rights awareness and sensitivity. Statistical analysis revealed significant improvements in posttest scores compared to pretest scores for the Instructional Materials Motivation Scale (IMMS), human rights awareness, and sensitivity. The results suggest that the Attention, Relevance, Confidence, Satisfaction (ARCS) model effectively enhances IMMS. Furthermore, improved human rights awareness and sensitivity through MHREAM may enable nursing students to contribute to creating healthcare environments that uphold the dignity and human rights of diverse populations, including migrants.

**Keywords:** ARCS model, Human rights, Instructional materials motivation survey, Migration, Nursing.

### 1. Introduction

The proportion of migrants in South Korea has steadily increased from 4.87% of the total population in 2019 to 4.89% in 2023 and is projected to reach 5.2% in 2024 [1]. Foreign residents in Korea consist of various groups, including marriage migrants, international students, foreign workers, and refugees [2]. In particular, South Korea's total fertility rate remains at a world-low level of 0.72 [3] raising concerns about economic growth and demographic shifts due to a shrinking productive population. In response, the South Korean government has transitioned from multicultural policies to immigration policies, emphasizing the stable settlement and social integration of migrants [2].

Despite the expansion of healthcare, social welfare, and educational policies aimed at migrant integration, many face difficulties accessing medical services due to linguistic, cultural, and social barriers [4]. Human rights violations can also occur in healthcare settings due to a lack of medical information, discriminatory attitudes among healthcare professionals, and culturally insensitive communication methods [5]. Addressing these issues requires healthcare professionals to possess cultural sensitivity and a strong awareness of migrant-related human rights.

Nurses play a crucial role in safeguarding migrants' health and human rights, as they interact most closely with patients. When nurses provide care with a human rights-centered approach, treatment adherence among migrant patients improves, leading to better health outcomes [6]. Studies have shown that nurses with higher human rights awareness are more likely to accept migrants, build positive relationships, and deliver high-quality nursing care [7]. Furthermore, nursing students with higher human rights awareness have demonstrated greater multicultural acceptance [8] highlighting the importance of integrating human rights education into nursing curricula.

However, the current nursing education curriculum in South Korea does not require courses specifically addressing migrant human rights. Instead, nursing ethics courses typically cover human rights topics as a secondary aspect [9]. Moreover, junior nursing students who have yet to gain clinical experience often do not recognize migrants as potential patients [10] resulting in low interest in protecting the human rights of migrants in clinical settings [11]. This lack of awareness also leads to limited motivation for learning about migration and human rights [10].

The Attention, Relevance, Confidence, Satisfaction (ARCS) model is a motivational theory designed to capture learners' attention, emphasize the relevance of learning content, and enhance learners' confidence and satisfaction to promote learning motivation [12]. Educational programs that apply the ARCS model foster active participation and increased learning motivation. Higher motivation leads to more time invested in learning, facilitating the achievement of learning goals [13]. Learning outcomes are assessed across cognitive, skill-based, and affective domains, and in human rights education, affective aspects—such as attitudes—are emphasized. Human rights awareness involves recognizing the inherent rights of all individuals, respecting the rights of oneself and others, and adopting a protective stance toward those rights [14]. Human rights sensitivity, defined as the ability to recognize situations where human rights may be compromised and consider possible actions to address such situations [15] is another critical learning outcome in human rights education. These two factors are closely related [16] and nursing students with high human rights sensitivity are better equipped to identify ethical issues in healthcare settings and make ethical decisions [17]. Nurses with high human rights sensitivity are also more likely to engage in advocacy behaviors to protect their patients' human rights [18].

While several studies have examined the effectiveness of the ARCS model in various educational contexts—demonstrating improved learning motivation, reduced dropout rates, and enhanced academic performance [19]—there is limited research on applying the ARCS model to human rights education. In the nursing field, Kim and Hyong [20] applied the ARCS model to a microbiology course incorporating laboratory practice for nursing students, resulting in increased motivation across its subdomains (attention, relevance, confidence, and satisfaction). Similarly, Kim [21] implemented a web-based radiation protection education program using the ARCS model for operating room nurses, which led to increased learning motivation and improved attitudes and behaviors regarding radiation protection.

Given the limited research on applying the ARCS model to human rights education, this study aimed to evaluate the effectiveness of the Migration and Human Rights Education Applying the ARCS Model (MHREAM) program in enhancing nursing students' motivation toward instructional material, human rights awareness, and human rights sensitivity. The findings are expected to guide the direction of human rights education in nursing and help nursing students become advocates for human rights, enhancing patient health rights and outcomes in clinical settings when interacting with migrant patients.

## 2. Methods

### 2.1. Study Design

This study adopted a single-group pretest-posttest experimental design to evaluate the effectiveness of an ARCS model-based migration and human rights education program in enhancing nursing students' motivation towards instructional materials, human rights awareness, and sensitivity.

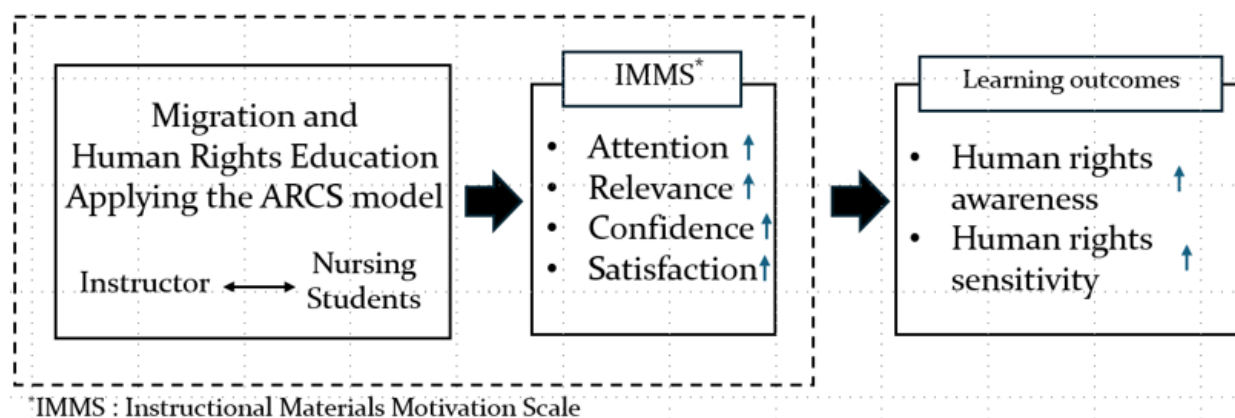
### 2.2. Data Collection

The study was conducted with students enrolled in the humanities foundation course “Migration and Human Rights” during the second semester of 2024 at K University's College of Nursing in Daegu, South Korea. The pretest was conducted from August 21 to September 4, 2024, before the course began, and the posttest was conducted from December 2 to December 15, 2024, using self-reported questionnaires administered via Google Forms. Among the 53 students enrolled in the course, 36 agreed to participate in the pretest. Data from 23 participants were collected during the posttest. All 23

students who completed both the pretest and posttest provided valid responses, and their data were included in the statistical analysis.

### 2.3. Research Framework

The framework for this study posited that applying [12] ARCS model to migration and human rights education for nursing students would enhance their motivation toward instructional materials, thereby improving the ARCS subdomains—attention, relevance, confidence, and satisfaction—as well as improve learning outcomes, including human rights awareness and sensitivity (Figure 1).



**Figure 1.**  
Research Framework.

### 2.4. Migration and Human Rights Education Applying the ARCS Model (MHREAM)

The "Migration and Human Rights" education program was based on *Understanding Human Rights* [22] and tailored to include necessary content for nursing students. A human rights professor reviewed the validity of the educational content, and an educational technology professor verified its relevance to the ARCS model. The program spanned 14 weeks, with one 75-minute session per week. The instructional design, aimed at enhancing and sustaining motivation, emphasized the four ARCS components: attention, relevance, confidence, and satisfaction (Keller, 1983). The following strategies were employed for each ARCS component:

Attention: Perceptual arousal (A1) and inquiry arousal (A2)

Relevance: Goal orientation (R1) and motive matching (R2)

Confidence: Learning prerequisites (C1), opportunity for success (C2), and personal control (C3)

Satisfaction: Reinforcement (S1) and extrinsic rewards (S2) (Table 1)

**Table 1.**  
Contents of Each Session of “Migration and Human Rights” with the ARCS Model for Nursing Students.

Session	Theme	ARCS Strategies	
		A1 (10 min)	
	-Pretest -Lecture Introduction		
1	Domestic and International Migration Status	Analyzed the painting <i>The Last Day in England</i> , 1852–1855, by Ford Madox Brown to discuss: -Who is migrating? -Where are they migrating from and to? -What emotions are expressed by the migrants?	Pre-Lecture Quiz (5 minutes) (A2)
2	Concept of Human Rights	Identified one example each of human rights violations and protections in comics.	
3	History of Human Rights	Explored the background of the <i>Declaration of the Rights of Man and of the Citizen</i> (1789) through the film French Revolution.	Presentation of Learning Objectives and Content (2 minutes) (R1)
4	Universal Declaration of Human Rights	Reviewed the structure of the <i>Universal Declaration of Human Rights</i> through a comic adaptation.	Lecture & Discussion (40 minutes) (R2)
5	Human Rights: Civil Liberties	Learned about civil liberties through the story of the Rutgers Square protest (1908) in New York.	Summary of Key Learning Points (3 minutes) (C1)
6	Human Rights: Social Rights	Analyzed a news article about the creation and distribution of child exploitation materials to understand social rights violations.	Post-Lecture Quiz (5 minutes) (C2)
7	Human Rights: Equality Rights	Studied the history of women's suffrage through the film <i>Suffragette</i> .	Quiz Difficulty Selection (C3): Allowed students to choose quiz levels (easy, medium, hard) to foster a sense of control over their learning.
8	Midterm Exam		
9	Human Rights of Minorities: Children	Read the National Human Rights Commission's decision on adjusting the age of criminal responsibility and presented arguments for or against.	Reflection journal (15 minutes) (S1)
10	Human Rights of Minorities: Elderly	Viewed photos of residents in the Dutch village Hogeweyk, a village for dementia patients, to understand elder rights.	Session preview (2 minutes) (S2)
11	Migration and Human Rights	Explored the realities of migration using Hein de Haas's book <i>The Age of Migration: International Population Movements in the Modern World</i> .	Providing feedback on the reflection journals (S2*)
12	Current Issues in Migrants' Human Rights	Discussed whether South Korea has ratified the <i>International Convention on the Protection of the Rights of All Migrant Workers and Members of Their Families</i> .	
13	Migrants' Human Rights Policies	Studied domestic policies to ensure healthcare rights for migrants.	
14	Final Exam		
	Posttest		

**Note:** \* The reflection journal written in the previous session was evaluated, and individual feedback was provided after the class.

## 2.5. Instruments

### 2.5.1. Instructional Materials Motivation Scale (IMMS)

Motivation toward instructional materials was measured using the IMMS developed by Keller [23] and translated by Cho, et al. [24]. The IMMS comprises 36 items categorized into four subdomains: attention (12 items), relevance (9 items), confidence (9 items), and satisfaction (6 items). Each item is rated on a 5-point Likert scale ranging from 1 (“Strongly Disagree”) to 5 (“Strongly Agree”), with a total score range of 36–180 points. Higher scores indicate higher levels of learning motivation. The

original instrument demonstrated high reliability with Cronbach's alpha values of .89 (attention), .81 (relevance), .90 (confidence), .92 (satisfaction), and .96 for the overall scale. In this study, the overall reliability of the IMMS was Cronbach's  $\alpha = .89$ .

## 2.5.2. Learning Outcomes

### 2.5.2.1. Human Rights Awareness

Human rights awareness was measured using a tool developed by Cho [14] for the Korean population. The tool comprises 18 items across three domains: civil and political rights, economic and social rights, and the rights of socially disadvantaged groups and minorities (6 items per domain). Each item is rated on a 5-point Likert scale ranging from 1 ("Strongly Disagree") to 5 ("Strongly Agree"), with a total score range of 18–80 points. Higher scores indicate higher levels of human rights awareness. The tool's reliability was Cronbach's  $\alpha = .70$  in Cho [14] study and Cronbach's  $\alpha = .80$  in this study.

### 2.5.2.2. Human Rights Sensitivity

Human rights sensitivity was measured using the Scale for Human Rights Sensitivity developed by Moon, et al. [15] for college students and adults. The original tool comprises 10 scenarios designed to measure situational awareness, outcome perception, and responsibility perception. Only the two scenarios most sensitive to college students were selected for this study to mitigate respondent fatigue [15]. Each scenario contains both human rights-related and non-human rights-related items, rated on a 5-point Likert scale from 1 ("Not Important at All") to 5 ("Very Important"). Responses were scored as zero if the score for human rights-related items was lower than the score for non-human rights-related items. Points were only awarded when human rights-related item scores were higher, with possible scores ranging from 0 to 5 per item. Higher scores indicate higher sensitivity to human rights. The tool's original reliability was Cronbach's  $\alpha = .88$ , and Cronbach's  $\alpha$  in this study was .68.

## 2.6. Ethics Statement

Participants were informed about the study's purpose, intent, and potential effects on their participation. They were assured of confidentiality and the right to withdraw from the study without consequences. Only those who indicated their consent by selecting "Agree" on the first item of the Google Forms survey were included in the data collection. The collected data were used solely for research purposes and were stored for 1 year after the study's conclusion before being securely destroyed according to relevant regulations.

## 2.7. Data Analysis

The collected data were analyzed using IBM SPSS for Windows version 29.0. The analyses included:

Descriptive statistics to examine participants' general characteristics, IMMS scores, human rights awareness, and human rights sensitivity.

Paired t-tests to compare pretest and posttest scores for IMMS, human rights awareness, and human rights sensitivity.

## 3. Results

### 3.1. General Characteristics of Participants

The participants had an average age of 22.09 years, and 87% were female. Most (91.3%) were second-year students, and 47.8% reported having a religious affiliation (Table 2).

**Table 2.**  
General Characteristics of Participants.  
(N = 23)

Categories		M ± SD	n (%)
Age(years)		22.09 ± 2.25	
Gender	Male		3 (13.0)
	Female		20 (87.0)
Grade	1		1 (4.3)
	2		21 (91.3)
	3		1 (4.3)
Religion	Yes		11 (47.8)
	No		12 (52.2)

### 3.2. Comparison of Pre-and Post-MHREAM IMMS, Human Rights Awareness, and Sensitivity

The IMMS scores increased significantly from a pretest mean of  $131.35 \pm 12.50$  to a posttest mean of  $145.74 \pm 15.59$  ( $t = -4.324$ ,  $p < .001$ ). All subdomains—attention, relevance, confidence, and satisfaction—showed significant improvements ( $p < .05$ ).

Human rights awareness also improved from  $62.91 \pm 8.21$  to  $65.65 \pm 8.21$  ( $t = -2.416$ ,  $p = .024$ ), with a significant increase in awareness of the rights of socially disadvantaged groups and minorities ( $t = -3.284$ ,  $p = .003$ ).

Human rights sensitivity increased from  $13.52 \pm 7.47$  to  $18.52 \pm 7.82$  ( $t = -2.555$ ,  $p = .018$ ) (Table 3).

**Table 3.**  
Comparison of Pre-and Post-MHREAM IMMS, Human Rights Awareness, and Sensitivity (N = 23).

Variables	Pretest	Posttest	t	P
	M ± SD			
IMMS <sup>※</sup>	131.35 ± 12.50	145.74 ± 15.59	-4.324	.001
Attention	41.78 ± 4.43	45.87 ± 5.93	-3.747	.001
Relevance	35.22 ± 3.35	37.83 ± 4.38	-2.339	.029
Confidence	32.70 ± 3.93	37.13 ± 3.75	-5.260	.001
Satisfaction	21.65 ± 2.79	24.91 ± 3.21	-3.907	.001
Learning outcomes				
Human rights awareness	62.91 ± 8.21	65.65 ± 8.21	-2.416	.024
Civil and political rights	18.61 ± 3.34	18.78 ± 3.65	-.279	.783
Economic, social, and cultural rights	21.52 ± 3.65	22.39 ± 3.29	-1.843	.079
Socially disadvantaged groups and minorities rights	22.78 ± 2.41	24.48 ± 2.98	-3.284	.003
Human rights sensitivity	13.52 ± 7.47	18.52 ± 7.82	-2.555	.018

**Note:** \*Instructional Materials Motivation Survey

## 4. Discussion

This study evaluated the effects of ARCS model-based migration and human rights education on nursing students' IMMS scores, human rights awareness, and sensitivity. A comparison of pre- and post-education scores revealed significant improvements across all measured variables.

First, both overall IMMS scores and subdomain scores increased significantly after the education. These findings are consistent with those of Smith and Brown [25] who reported that human rights education significantly enhances learners' active participation and learning motivation. Similarly, Kim, et al. [26] found that human rights education positively affects learners' critical thinking and self-directed learning attitudes. These results suggest that the educational intervention increased learners' intrinsic motivation and interest in migration and human rights. Additionally, this study aligns with



previous findings that microbiology courses incorporating the ARCS model, along with practical training, improved nursing students' motivation and subdomain scores [20]. Similarly, general college students demonstrated enhanced instructional motivation and subdomain scores after attending ARCS-based classes [19, 27]. The increase in IMMS and subdomain scores indicates that learners developed sustained interest and motivation to explore migration and human rights topics further. These findings suggest that applying the ARCS model in human rights education can trigger changes in learners' attitudes and promote ongoing learning and behavioral change.

Jo, et al. [28] suggested that using various audiovisual media and creating a sense of curiosity through mystery can enhance attention. In this study, paintings, comics, and movies were used at the beginning of the lesson to stimulate learner interest. Pre-lecture quizzes were also employed to encourage inquiry-based attention.

Relevance scores also improved significantly after the education. According to Jo, et al. [28] relevance is enhanced when learners understand the practical benefits of the lesson and its real-life applications, which fosters goal orientation. In this study, goal orientation was increased by presenting learning objectives and key content at the start of each session. Additionally, post-lecture discussions following each lecture promoted facilitated motive matching by aligning the learning environment with students' needs.

Confidence scores also showed significant improvements. Jo, et al. [28] noted that summarizing key learning points and incorporating appropriately challenging tasks can increase confidence. In this study, key learning concepts were summarized at the end of each session, and quizzes of varying difficulty levels were provided. Allowing students to select quiz levels based on their perceived competence likely enhanced their sense of personal control over learning.

Satisfaction scores also improved. Jo, et al. [28] stated that self-reflection and recognition of one's progress through competition or self-records can foster intrinsic reinforcement, while praise and continuous encouragement can provide extrinsic reinforcement. In this study, reflective journals encouraged learners to connect lessons with real-life experiences and evaluate their progress. Personalized feedback and encouragement from instructors further strengthened extrinsic reinforcement.

Human rights awareness scores increased significantly after the education, indicating that learners developed a broader and more critical perspective on human rights issues. The most notable improvement was in awareness of the rights of socially disadvantaged groups and minorities. These findings align with those of Lee and Park [29] who reported that human rights education reduces prejudice and enhances awareness of minority rights. This demonstrates that migration and human rights education effectively reduce biases and foster active recognition of others' rights.

Human rights sensitivity scores also improved significantly after the education. Choi [30] found that sensitivity enhancement programs improved learners' ethical judgment and empathy, which is consistent with this study's findings. Similarly, Kim and Chung [31] reported that human rights education improved sensitivity among caregivers in elderly care facilities. The observed increase in human rights sensitivity among nursing students suggests a greater ability to recognize and respond appropriately to discriminatory or harmful behaviors toward migrants in both daily life and clinical settings.

This study is significant because it empirically validates the effectiveness of migration and human rights education using the ARCS model in improving nursing students' motivation toward instructional material, human rights awareness, and sensitivity. However, the absence of a control group limits the study's ability to determine whether observed changes were attributable solely to the educational intervention or were influenced by external factors.

## 5. Conclusion

This study evaluated the effects of ARCS-based migration and human rights education on nursing students' motivation toward instructional material, human rights awareness, and sensitivity. Post-

education scores for IMMS, its subdomains, human rights awareness, and sensitivity demonstrated significant improvements. Notably, awareness of the rights of socially disadvantaged groups and minorities improved significantly.

High human rights awareness among nursing students is essential for fostering healthcare environments that uphold the dignity and rights of all individuals, including migrants. Nurses with enhanced sensitivity will be better equipped to identify and address discrimination or human rights violations. Ultimately, such improvements will contribute to the protection of the health and fundamental rights of migrant populations.

Future studies should assess the long-term effects and sustainability of ARCS-based migration and human rights education to develop more structured and effective educational strategies for nursing students.

### Transparency:

The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

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