

This is an electronic reprint of the original article.

Author(s):	Cubelo, Floro
Title:	Bilingual modified flipped learning in international nursing education: a discursive approach
Year:	2023
Version:	Publisher's version
License:	CC BY-NC-ND 4.0

Please cite the original version:

Cubelo, Floro. (2023). Bilingual modified flipped learning in international nursing education: A discursive approach. *International Journal of Nursing Sciences*, 10(4), 562-567.

HOSTED BY



Contents lists available at ScienceDirect

International Journal of Nursing Sciences

journal homepage: <http://www.elsevier.com/journals/international-journal-of-nursing-sciences/2352-0132>



Discussion

Bilingual modified flipped learning in international nursing education: A discursive approach

Floro Cubelo ^{a, b, c}

^a School of Wellbeing and Culture, Oulu University of Applied Sciences, Oulu, Finland

^b International Management and Affairs, The Filipino Nurses Association in the Nordic Region, Helsinki, Finland

^c Faculty of Health Sciences, Department of Nursing Science, University of Eastern Finland, Kuopio Campus, Kuopio, Finland

ARTICLE INFO

Article history:

Received 15 June 2023

Received in revised form

30 August 2023

Accepted 17 September 2023

Available online 21 September 2023

Keywords:

Bilingual

Finland

Flipped learning

Nursing education

Nursing students

ABSTRACT

Finland is experiencing a nurse shortage, leading to the recruitment of internationally educated nurses (IENs). The Finnish education system aims to attract more international students, including those in healthcare. International nursing students (INS) face challenges due to language barriers and cultural differences. This paper introduced the bilingual modified flipped learning (BMFL) approach to address these issues. The BMFL, grounded in constructivist learning theory, incorporated flipped learning and learning stations to facilitate INS integration. It emphasized autonomy and collaboration, with students engaging in pre-class content and in-class interactive activities. The strategy enhanced language skills, clinical decision-making, and communication. Policy and practice recommendations were proposed to support the integration of BMFL, targeting the alleviation of nurse shortages and facilitating the harmonious integration of INS into the Finnish healthcare workforce.

© 2023 The authors. Published by Elsevier B.V. on behalf of the Chinese Nursing Association. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

What is known?

- International nursing students (INS) face challenges due to language barriers, cultural differences, and inadequate language skills for clinical practice.

What is new?

- The bilingual modified flipped learning (BMFL) approach is introduced as a pedagogical strategy tailored for INS, aiming to enhance language skills, clinical decision-making, and integration into the Finnish healthcare system.
- BMFL incorporates learning stations and flipped learning, fostering collaboration, reflective learning, and student ownership of the learning process, addressing challenges faced by INS, and providing an innovative solution to nursing education.

1. Introduction

In the global context of 2019, a substantial shortage of 30.6 million nurses and midwives was observed [1], a situation that was further exacerbated by the challenges imposed by the COVID-19 pandemic [2]. The pressing need to address this deficit with up to 13 million nurses globally is now considered a global health emergency [2]. Responding to this challenge, a collective call urges governments to invest in nursing education advancement and create 6 million new nursing positions by 2030, focusing on low- and middle-income economies. Enhancing nurse leadership is also crucial [3].

In Finland, a shortage of over 16,000 registered nurses and nearly 9,000 practical nurses is evident [4], prompting the recruitment of Internationally Educated Nurses (IENs) from developing nations [5]. This critical shortage of nursing professionals prompted the active recruitment of IENs from developing countries such as the Philippines, Kenya, India, Zambia, Vietnam, and Myanmar to fill the gaps in healthcare facilities [6].

The importance of attracting international students, including those in healthcare, has been highlighted by Finnish universities. In parallel, the population of foreign degree students in Finland has experienced a significant surge, growing from approximately 6,000 in 2,000 to over 21,000 in 2016 [7]. This increase resulted in

E-mail address: floro.cubelo@oamk.fi.

Peer review under responsibility of Chinese Nursing Association.

foreign students accounting for 8% of the total student population in higher education institutions. Recognizing the need to attract more international students including healthcare students, the Rectors' Conference of Finnish Universities of Applied Sciences has emphasized the importance of increasing the number of international students in Finland and fostering their integration into the local workforce [8].

International nursing students (INS) face diverse challenges within the Finnish nursing education context, encompassing language barriers, cultural disparities [9–11], and potential negative mentorship attitudes [10]. Those with limited proficiency in Finnish encounter suboptimal clinical mentorship when compared to their locally fluent peers [11]. This complexity arises due to the variance between students' native languages, the theoretical instruction language, and the languages employed by caregivers and patients during clinical experiences [9].

Within the context of these aforementioned challenges, it is noteworthy that despite the longstanding existence of English-language nursing education programs like the English Degree Program in Nursing (DPN) [9], the commencement of such initiatives specifically in Northern Ostrobothnia at the Oulu University of Applied Sciences only materialized in 2022. This temporal aspect underscores a substantial demand, accentuating the significance of pioneering pedagogical strategies aimed at facilitating the seamless integration of INS. The population of INS in Finland has surged, underscoring the need for tailored pedagogical approaches, like bilingual modified flipped learning (BMFL), designed to meet the needs of INS.

While learning stations in BMFL with INS remain understudied, they offer potential for practical training in various healthcare settings. Flipped learning, which shifts educators' roles toward interactive teaching, enhances nursing knowledge and critical thinking. A modified version involves small learning communities, with pre-class discussions preparing students for in-class activities. Addressing language barriers is essential for patient-nurse communication, necessitating bilingual education [12]. Incorporating INS training within the BMFL context aids their preparation for Finnish work life and clinical decision-making.

2. Modified flipped learning and the bilingual advantage in education

Flipped learning is a pedagogical approach that involves a reversal of the traditional classroom structure [13,14]. In this model, students are responsible for their own learning and engage with instructional content before the in-person class session, allowing the in-class time to be dedicated to interactive activities, collaborative discussions, and problem-solving [13,15–19]. This approach aims to enhance student engagement, critical thinking, and self-directed learning by shifting the role of educators from direct content delivery to facilitating deeper understanding through active learning experiences [13,15–19]. The empirical basis for the assertion is substantiated by a systematic review undertaken by Barranquero-Herbosa et al. [13], wherein it was determined that the incorporation of the flipped classroom methodology within nursing education exhibits a discernible elevation in performance metrics, encompassing both students and faculty constituents alike.

Modified flipped learning (MFL) establishes a dynamic learning model where students actively engage in collaborative group activities. Prior to the class session, they undertake literature reviews, generate questions, and participate in online and offline discussions. Within the class timeframe, a designated teaching group assumes the responsibility of imparting content to their peers, while also orchestrating interactive engagements. Following the class interaction, collaborative groups initiate empirical research

endeavors, culminating in the creation of research reports [20].

In the context of MFL, which encompasses verbal presentations, an avenue emerges for students to exchange and share their ideas with their peers, thus fostering a platform for constructive dialogue and feedback on their performance. During this phase, the teacher assumes the role of guiding and facilitating class discussions. The overarching goal of these discussions is to extract the most comprehensive explanations and solutions to the presented problems, ensuring a robust grasp of the subject matter across all students [21]. This facet of MFL cultivates a deeper understanding and empowers students to proactively participate in the learning process and assume a sense of ownership over their educational pursuits [22].

In nursing education, the application of flipped learning has gained traction as a way to enhance the development of clinical reasoning skills, critical thinking abilities, and collaborative competencies among nursing students [13,19]. Within the context of flipped learning, this approach helps in the advancement of fundamental proficiencies, metacognitive capacities, and self-regulated learning tendencies. This approach is a notably well-suited instructional modality to navigate the intricate transformation of contemporary nursing curricula. Its potential resides in enhancing the skill sets of nursing students, equipping them to tackle a diverse array of challenges effectively [16].

The BMFL approach conceptualized by the author, tailored for cultural and linguistic needs, is aimed at enhancing Finnish language proficiency and the employability of INS within the local society. Furthermore, the author provides a personal viewpoint regarding this approach through an exploration of personal experiences and by sharing a case sample of its implementation.

The paper expounds upon the utilization of BMFL through the implementation of learning stations, presenting an innovative pedagogical approach to educating INS. It delves into how this approach serves as a valuable foundation for elevating students' proficiencies within multicultural contexts, effectively preparing them for subsequent high-fidelity simulations. The author meticulously elucidates this strategy through the lens of constructivism, illuminating its underlying principles, and substantiates the approach with a practical example. The example underscores how the strategy was operationalized within a classroom environment. Furthermore, the article offers insights into curriculum design considerations and proposes potential avenues for forthcoming empirical investigations.

3. Conceptualization of BMFL using constructivism

The educational landscape within Finnish adult education underscores the primacy of autonomy, self-initiative, and independence. This emphasis aligns seamlessly with the constructivist learning theory, which posits that learners actively build their knowledge through experiences and interactions within their environment [23–25]. Collaborative learning, a pivotal component of this framework, gains prominence due to its proven efficacy in cultivating heightened productivity and the generation of innovative ideas and concepts, thereby propelling the learning trajectory forward. This pedagogical evolution transcends autocratic and teacher-centric methods, heralding a shift towards learner-centered practices [23–25].

In the realm of adult education in Finland, optimal learning unfolds when adults actively immerse themselves in their educational journey and undertake preparatory measures for educational activities, allowing them to identify and address areas of uncertainty during lectures. Reflecting the societal context in Finland, where fluency in the Finnish language is frequently a job market prerequisite, educators deploy innovative strategies to integrate

language acquisition into teaching methodologies seamlessly. This entails employing Finnish instructional materials while conducting lessons in English, ensuring both comprehension and content mastery remain uncompromised.

The constructivist learning theory applies to this context, harmonizing with the principles and objectives of Finnish adult education. The theory accentuates learners' active role in constructing their understanding, fostering a profound interconnection between personal experiences and newfound knowledge [23–25]. Collaborative learning synergizes with the constructivist approach, as it promotes social interaction, dialogues, and cooperative problem-solving [23–25], aligning harmoniously with the collaborative ethos of Finnish adult education.

The emphasis on language skills is underpinned by the essential role that nurses assume in interacting with patients within the clinical environment [26]. However, existing nursing programs often need a robust emphasis on fostering bilingual competencies among students [26] unless undertaking foreign language courses stems from academic prerequisites and mandates [12]. The incorporation of the bilingualism principle within the BMFL framework is fundamentally grounded in the recognition of Finland's dominant language, Finnish. The imperative arises from the necessity to equip students for seamless integration into clinical practicum settings and eventual engagement within the Finnish professional milieu. As such, educational strategies need to be adeptly tailored to cultivate proficiency in both English and Finnish languages. In order to enhance the integration, INS are enrolled in rigorous Finnish language courses spanning the entire academic year. This strategic measure aims to provide substantial support, facilitating their enhanced readiness for forthcoming clinical practicum experiences.

By embracing a BMFL approach rooted in constructivism, international nursing students are nurtured within an environment that champions self-directed learning and active engagement. The BMFL ingeniously integrates theoretical comprehension and practical application, allowing learners to grasp concepts and proficiently apply them. Constructivism, within the BMFL framework, reinforces this process by empowering students to construct their cognitive frameworks, fostering exploration, and cultivating critical thinking. Thus, constructivism serves as the bedrock of the pedagogical foundation propelling the successful assimilation of BMFL within the Finnish context in both English and Finnish.

4. Implementation of BMFL in learning stations

The INS encountered difficulties adapting to the Finnish learning environment, despite the English-medium program. Notably, clinical practice guidance predominantly employs the Finnish language, and patient communication primarily occurs in Finnish [9]. The inadequate Finnish language skills contribute to suboptimal learning conditions. Furthermore, those with limited language proficiency perceive a compromised learning experience [9]. To address these challenges, a recognized need exists for the development of mentor education and the refinement of pedagogical methods. These improvements seek to elevate linguistic and professional comprehension within nursing, encompassing proficiency in Finnish and English. Furthermore, there is a notable need to empower students with greater control over their learning trajectories. The establishment of the BMFL framework is grounded in response to these imperatives.

4.1. Structural process

In the instructional process, theoretical lectures occur in the days preceding clinical skills labs (CSL), as illustrated in Fig. 1. This

strategic timing allows CSL to concentrate on refining hands-on skills, while nursing students understand deeper into the subject matter and pose inquiries. Beforehand, students submit a preliminary assignment electronically via the online learning management system (LMS), showcasing their grasp of essential CSL principles (Table 1). Consequently, any misunderstandings or errors can be addressed during the CSL mini-lecture, which targets correcting student misconceptions. The LMS provides prompt feedback on preliminary tasks, and answers to learning station queries, and is evaluated on a pass/fail basis.

During the CSL, an instructor initiates a concise 30 to 45-min mini-lecture, summarizing a brief overview of the theoretical foundation and CSL instructions. Concurrently, each group is allocated to a learning station, cross-referencing the instructor's question list with corresponding nursing procedure materials. While students work out solutions, the instructor circulates to ensure correct answers and the attainment of required competencies prior to authorizing students to instruct their peers. Only after content approval and scrutiny of hands-on skills does a student partake in the final demonstration.

The debriefing phase fosters a collaborative dialogue between the instructor and students concerning the learning sessions and the learning station process. Students individually or collectively reflect on lessons learned and ways to enhance open skills labs (OSL). These OSL function as supplementary sessions to reinforce fundamental nursing skills essential to the curriculum, enabling free hands-on practice before the conclusive Skills Assessment Test (SAT). During OSL, practical skills are exercised extensively in English and Finnish, preparing students for the predominantly Finnish-language clinical practicum. The SAT acts as the ultimate assessment, evaluating students' hands-on skills within the context of real case scenarios.

The use of online learning management systems is pivotal in implementing a BMFL approach. The platform furnishes an array of tools and resources aiding non-native speakers in comprehending evidence-based content in the Finnish healthcare framework. Given that Finnish guidelines are predominantly available in the Finnish language at local and national levels, this approach allows adequate time for INS to acquaint themselves with the material and to seek clarifications from native Finnish-speaking peers. Prior to the formal submission of preliminary tasks, a proficient bilingual instructor reviews the study materials.

Initially, the instructor furnishes evidence-based resources in both English and Finnish, sourced from scholarly databases accessible through institutional subscriptions or open access. Non-native speakers are granted time to navigate these materials, in preparation for responding to the preliminary assignment questions. Subsequently, INS submit their preliminary assignments and gain access to a forum section enabling discussions and clarification-seeking, facilitated by peers and the bilingual instructor. Feedback is provided to INS by an instructor proficient in English and Finnish.

For effective integration into the BMFL during CSL, each group is equipped with at least one native speaker, allowing students to practice the local language without compromising content comprehension. As the materials are rooted in the latest evidence-based guidelines from Finnish scientific databases, the presence of a native speaker in a group proves beneficial for non-native speakers in grasping key points, which the circulating instructor subsequently verifies.

4.2. Case sample

In the case of the Fundamentals of Pharmacotherapy course, which corresponds 4 European Credit Transfer and Accumulation System (ECTS) (1 ECTS = 25–30 h of work) [27], two CSLs are

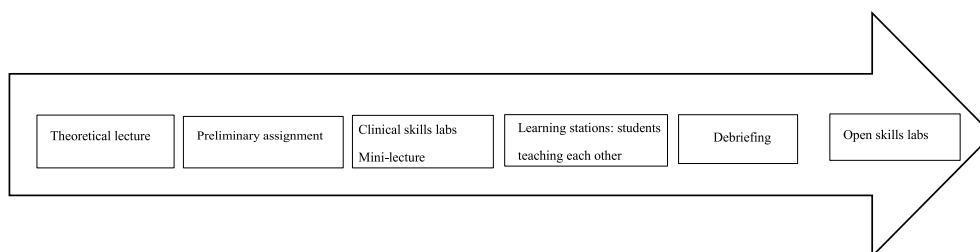


Fig. 1. Learning process in a bilingual modified flipped learning (BMFL) using learning stations with the international nursing students.

Table 1

Teaching process of a bilingual modified flipped learning.

Variable	Facilities with limited resources	Facilities with ample resources	Measurable outcomes
Theoretical lecture	In a classroom set-up, if there is no videoconferencing.	Hybrid lecture set-up or completely virtual	Short quizzes either online using plug-in tools in the learning management system or in-person by testing the knowledge of students. A binary grading system (pass or fail) is enough, but a numerical scale system is also applicable.
Preliminary assignment	If without an online learning management system, students can submit their assignments through paperwork.	Submit the assignment with a set deadline in the online learning management system.	Direct feedback online or in person and assessment can be done using a binary grading system (pass or fail).
Clinical skills labs mini-lecture	Face-to-face		Discussion with students by directly asking about their understanding of the topic.
Learning stations	If supplies are not available, pictures can be printed to show the students the critical points of how equipment or procedures work and their implications for nursing. Instructors can provide additional information for what is missing.	For organizations with complete supplies, make sure that equipment or procedure are done properly. Each station contains written guidelines or a QR Code directing students to learn about the assigned topic. Thereafter, students teach each other under the supervision of the instructor.	Presentations in bilingual modified flipped learning can be assessed using a binary grading system (pass or fail).
Debriefing	Students form a circle together with the students in the center of the circle to talk about their experiences.		Discussions with the students by directly asking about their experiences after the clinical skills labs (CSL).
Open skills labs (as needed)	Instructors do not perform any mini-lecture anymore but focus more on the skills of the students.		Comparison of the experiences during actual CSL and open skills labs and whether there are improvements.

assigned for the entire period: Medication Administration 1 (Enteral Medication) (Fig. 2) and Medication Administration 2 (Parenteral Medication, in particular to intradermal, subcutaneous, and intramuscular injections). For example, in Medication Administration 1, before being allowed to enter the CSL, INS are obliged to submit the answers to the preliminary assignment about oral medications, rectal medications, inhalers, and drops. This allows students to practice more on medication administration rather than focusing on the theoretical aspect, which is conducted at a different time. Prior to the implementation of CSL, students have

been provided with comprehensive lectures either in-person, virtually, or in a hybrid format. The CSL is utilized to validate the application of knowledge to skills. If the students miss the CSL, OSL are arranged as needed to help them practice their skills before the actual Skills Assessment Test (SAT), the actual final examination, to evaluate their clinical skills before the practicums.

Based on debrief feedback, INS prefer collaborative learning because they get peer support and feel less pressure than in the traditional authoritarian instructor-centered approach, where the instructor demonstrates and carefully monitors each student's

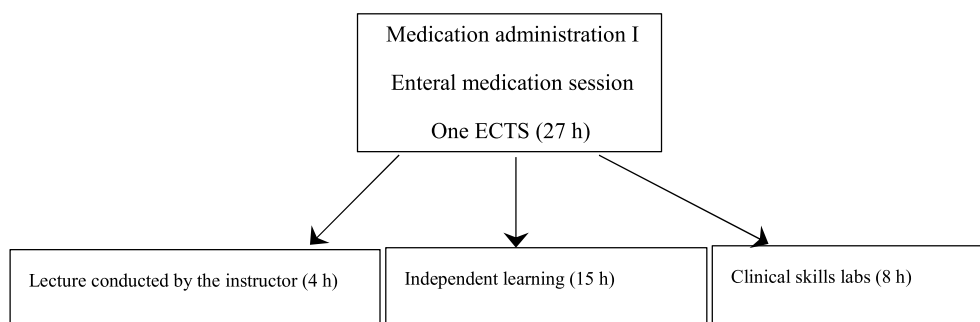


Fig. 2. Example activity in the clinical skills labs (CSL) and corresponding number of hours based on European Credit Transfer and Accumulation System (ECTS).

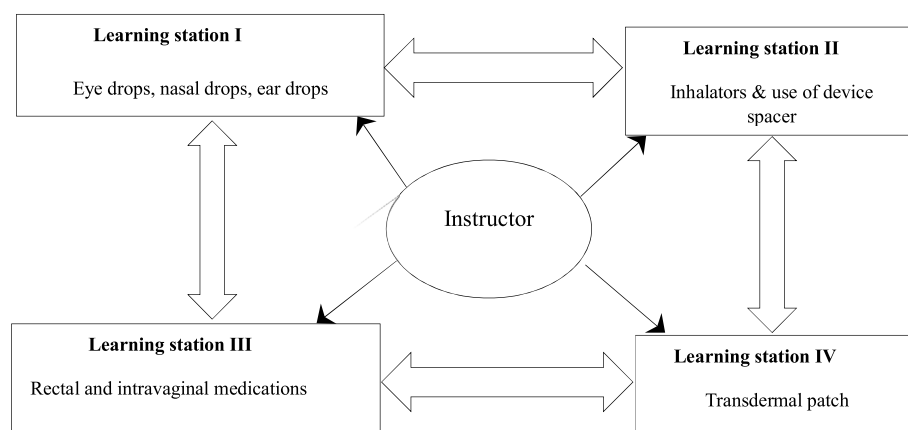


Fig. 3. Example case on how bilingual modified flipped learning (BMFL) is implemented in a classroom set-up.

learning. By educating in a student-friendly approach without using complicated medical terminologies, INS can exercise their skills, knowledge, and abilities without pressure. However, students are encouraged to use medical terms to expand their nursing vocabulary.

Learning stations (Fig. 3), on the other hand, can be disadvantageous for larger groups due to the instructor's restricted resources. In the author's experience, this technique works for classes with fewer than 20 students and at least four groups per instructor divided into four learning stations. Each learning station consists of four members, comprising a combination of individuals who are native speakers of Finnish and those who are not proficient in the Finnish language. Clinical nursing skills can be quickly assessed by allocating two instructors to a group of twenty students. As INS are exposed to reading, hearing, and speaking the Finnish language in BMFL, their communication and interpersonal skills improve. Acquiring proficiency in a foreign language can enhance one's employability and career progression [26].

5. Recommendations

5.1. Advocating BMFL integration: policy recommendations

Policy recommendations entail advocating for the integration of BMFL strategies combined with learning stations in educational environments. This integration should be encouraged through educational policies to harness the potential benefits of enhanced student engagement and improved learning outcomes. Additionally, policies should allocate resources to support language education, particularly for INS acquiring a second language. By prioritizing language teacher provision or language support programs, effective communication and comprehension can be fostered. Facilitating global research collaboration is also pivotal to standardizing the implementation of these strategies. Cross-border partnerships between educational institutions and researchers would facilitate the exchange of insights and best practices.

5.2. Implementing BMFL: practical guidelines

In practice, educators should meticulously design and structure the deployment of BMFL with learning stations. This strategic approach should encompass factors like content relevance, student readiness, and technological accessibility to ensure successful execution. To optimize student engagement, educators are encouraged to incorporate learning stations into practical and clinical settings, where interactive and hands-on activities align

with learning objectives. Furthermore, institutions should consider integrating language support personnel and collaborating between subject teachers and language instructors to enhance communication and comprehension, especially for INS learning in a second language.

5.3. Enriching BMFL research: insights and challenges

The research landscape can be enriched through empirical studies utilizing clinical instruments to gauge INS' satisfaction levels with BMFL methodologies employing learning stations. This empirical evidence would offer valuable insights into effectiveness and student perceptions. Complementary qualitative studies should investigate challenges faced by INS during such sessions, shedding light on barriers and possible solutions. The influence of language instructors on comprehension, engagement, and learning outcomes should be explored. Additionally, research efforts should extend to cross-cultural contexts to ascertain the replicability and adaptability of the BMFL approach with learning stations. Through these combined efforts, educators, institutions, and researchers can collectively elevate the educational experiences of INS.

6. Conclusion

The INS can help address the significant nurse shortage. The innovative strategy involves a modified version of flipped learning that incorporates bilingual language instruction through the use of learning stations which facilitates the assimilation of nursing students into the Finnish system and enhances their readiness for future employment opportunities. In adult education, BMFL classrooms let students learn nursing concepts without pressure during CSL. This pedagogical approach allows students control over their learning while ensuring that the instructor aids them without pressure.

Funding

Nothing to declare.

Data availability statement

Data sharing not applicable to this article as no datasets were generated or analyzed during the current study.

Declaration of competing interest

The author has declared no conflict of interest.

Acknowledgments

I would like to acknowledge Tytti Sakaranaho (Senior Lecturer), Markus Karttunen (Manager), Raija Rajala (Head of the Degree Programme in Emergency Care), and Taina Junttila (Director) at Oulu University of Applied Sciences, School of Wellbeing and Culture for sharing their knowledge and expertise in the Degree Programme in Nursing.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.ijnss.2023.09.006>.

References

- [1] Haakenstad, et al. Measuring the availability of human resources for health and its relationship to universal health coverage for 204 countries and territories from 1990 to 2019: a systematic analysis for the Global Burden of Disease Study 2019. *Lancet* 2022;399(10341):2129–54. [https://doi.org/10.1016/S0140-6736\(22\)00532-3](https://doi.org/10.1016/S0140-6736(22)00532-3).
- [2] Buchan J, Catton H. Recover to Rebuild. *ICN.ch*. https://www.icn.ch/sites/default/files/2023-07/ICN_Recover-to-Rebuild_report_EN.pdf. [Accessed 29 August 2023].
- [3] World Health Organization. State of the world's nursing 2020: investing in education, jobs and leadership. Genève, Switzerland: World Health Organization; 2020.
- [4] Punkari P. Pula sairaanhoitajista ja lähihoitajista on kasvanut räjähdysmäisesti kahden vuoden aikana koko Suomessa (Shortage of nurses and nursing assistants has exploded in two years across Finland). *Yle Uutiset* 2023. <https://yle.fi/a/74-20020199>. [Accessed 28 August 2023].
- [5] Cubelo F. Self-revocation of nurse licences in Finland – nursing response to deteriorating workplace and patient safety: implications for future nursing action. *Int. Nurs. Rev.* [Internet] 2023;70(3):286–90. <https://doi.org/10.1111/inr.12834>.
- [6] Cubelo F. Internationally educated nurses' role in climate change: sustainability and mitigation practices. *Publ. Health Nurs.* [Internet]. 2023;40(4):585–9. <https://doi.org/10.1111/phn.13185>.
- [7] Finnish National Board of Education. Maahanmuuttajien koulutuspolut ja integrointi- kipupisteet ja toimenpide-esitykset. *Okm.fi*; 2017. <https://okm.fi/documents/1410845/4240776/okm5.pdf/c8ba5aef-5038-4be0-80fd-80d75a00f8e7>. [Accessed 28 May 2023].
- [8] Ylönen N. STTK ja Arene: suomi tarvitsee lisää kansainvälisiä opiskelijoita (STTK and Arene: Finland needs more international students). *Arene - Ammattikorkeakoulujen rehtorineuvosto*. Arene; 2020. <https://arene.fi/ajankohtaista/sttk-ja-arene-suomi-tarvitsee-lisaa-kansainvalisia-opiskelijoita/>. [Accessed 15 June 2023].
- [9] Mattila L-R, Pitkärä M, Eriksson E. International student nurses' experiences of clinical practice in the Finnish health care system. *Nurse Educ Pract* 2010;10(3):153–7. <https://www.sciencedirect.com/science/article/pii/S1471595309001115>.
- [10] Pitkärä M, Eriksson E, Kekki P, Pitkala K. Culturally diverse nursing students in Finland: some experiences. *Int J Nurs Educ Scholarsh* 2012;9(1):1–16. <https://pubmed.ncbi.nlm.nih.gov/23091280/>.
- [11] Mikkonen K, Elo S, Miettunen J, Saarikoski M, Kääriäinen M. Clinical learning environment and supervision of international nursing students: a cross-sectional study. *Nurse Educ Today* 2017;52:73–80. <https://doi.org/10.1016/j.nedt.2017.02.017>.
- [12] Ali PA, Johnson S. Speaking my patient's language: bilingual nurses' perspective about provision of language concordant care to patients with limited English proficiency. *J Adv Nurs* 2017;73(2):421–32. <https://doi.org/10.1111/jan.13143>.
- [13] Barranquero-Herbosa M, Abajas-Bustillo R, Ortego-Maté C. Effectiveness of flipped classroom in nursing education: a systematic review of systematic and integrative reviews. *Int J Nurs Stud* 2022;135:104327. <https://www.sciencedirect.com/science/article/pii/S0020748922001560>.
- [14] Flipped Learning Network (FLN). Learning Network Flipped Flipped-Learn. 2014. <https://flippedlearning.org/definition-of-flipped-learning>. [Accessed 12 August 2023].
- [15] Elian SM, Hamaidi DAH. The effect of using flipped classroom strategy on the academic achievement of fourth grade students in Jordan. *Int. J. Emerg. Technol. Learn.* 2018;13(2):110. <https://doi.org/10.3991/ijet.v13i02.7816>.
- [16] Fan J-Y, Tseng Y-J, Chao L-F, Chen S-L, Jane S-W. Learning outcomes of a flipped classroom teaching approach in an adult-health nursing course: a quasi-experimental study. *BMC Med Educ* 2020;20(1):1–11. <https://doi.org/10.1186/s12909-020-02240-z>.
- [17] Namaziandost E, Çakmak F. An account of EFL learners' self-efficacy and gender in the Flipped Classroom Model. *Educ Inf Technol* 2020;25(5):4041–55. <https://doi.org/10.1007/s10639-020-10167-7>.
- [18] Shiau S, Kahn LG, Platt J, Li C, Guzman JT, Kornhauser ZG, et al. Evaluation of a flipped classroom approach to learning introductory epidemiology. *BMC Med Educ* 2018;18(1):1–8. <https://doi.org/10.1186/s12909-018-1150-1>.
- [19] Tan C, Yue W-G, Fu Y. Effectiveness of flipped classrooms in nursing education: systematic review and meta-analysis. *Chin Nurs Res* 2017;4(4):192–200. <https://doi.org/10.1016/j.cnre.2017.10.006>.
- [20] Chiang F-K, Chen C. Modified flipped classroom instructional model in "learning sciences" course for graduate students. *Asia-Pac. Educ. Res.* 2017;26(1–2):1–10. <https://doi.org/10.1007/s40299-016-0321-2>.
- [21] Putri MD, Rusdiana D, Rochintaniawati D. Students' conceptual understanding in modified flipped classroom approach: an experimental study in junior high school science learning. *J. Phys. Conf. Ser.* 2019;1157:022046. <https://doi.org/10.1088/1742-6596/1157/2/022046>.
- [22] Ahmad Lawan A, Ridwan Muhammad B, Muhammad Tahir A, Ibrahim Yarima K, Zakari A, Hassan Abdullahi II A, et al. Modified flipped learning as an approach to mitigate the adverse effects of generative artificial intelligence on education. *Educ J* 2023;12(4):136–43. <https://doi.org/10.11648/j.edu.20231204.14>.
- [23] Abualhaija N. Using constructivism and student-centered learning approaches in nursing education. *Int J Nurs Health Care Res* 2019;5(7):1–6. <https://doi.org/10.29011/IJNHR-093.100093>.
- [24] Epp S, Reekie M, Denison J, de Bosch Kemper N, Willson M, Marck P. Radical transformation: embracing constructivism and pedagogy for an innovative nursing curriculum. *J Prof Nurs* 2021;37(5):804–9. <https://www.sciencedirect.com/science/article/pii/S875572232100096X>.
- [25] Lee JJ, Clarke CL, Carson MN, Yang SC. How do Korean nursing students build knowledge? A constructivist grounded theory study. *BMJ Open* 2018;8(7):e022050. <https://bmjopen.bmj.com/content/8/7/e022050>.
- [26] Dos Santos LM. Developing bilingualism in nursing students: learning foreign languages beyond the nursing curriculum. *Healthcare (Basel)* 2021;9(3):326. <https://doi.org/10.3390/healthcare9030326>.
- [27] European Union. Luxembourg, Luxembourg: Publications Office of the European Union. 2015. https://education.ec.europa.eu/sites/default/files/document-library-docs/ects-users-guide_en.pdf. [Accessed 27 August 2023].