

# Enhancing nurses' continuous professional development through ARCS-V (attention relevance, confidence, satisfaction, volition) motivational design: The path to success

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## Abstract

Motivation plays a crucial role in the professional development of healthcare workers, particularly nurses, as it directly impacts learning engagement, clinical performance, and patient care quality. Given the high-stress environment in which nurses operate, training programs must incorporate motivational design strategies to sustain engagement and enhance learning outcomes.

The ARCS-V (Attention, Relevance, Confidence, Satisfaction, Volition) model, an extension of Keller's ARCS motivational design framework, provides a structured approach to improving motivation in education. By integrating components such as Attention, Relevance, Confidence, Satisfaction, and Volition, this model offers tailored strategies to enhance nurses' learning experiences. Research has shown that ARCS-based training programs, particularly those incorporating real-life case scenarios, psychodrama techniques, and interactive content, contribute to higher retention and engagement in nursing education.

In addition to instructional strategies, mentorship programs and interprofessional collaboration are essential for sustaining motivation beyond training. Emotional support, feedback mechanisms, and workplace integration strategies further strengthen long-term learning and professional growth. As healthcare education continues to evolve, digital tools such as virtual simulations and augmented reality (AR) applications should be incorporated into ARCS-V-based training to enhance accessibility and engagement.

Future research should focus on optimizing motivational strategies through personalized learning approaches and interdisciplinary education models. By integrating systematic motivational design principles, training programs can better support nurses' professional development, improve knowledge retention, and ultimately enhance patient care quality.

**Keywords:** ARCS-V motivational model, Instructional design, Nursing education, Professional development

## Introduction

“Are you drifting like a dry leaf, or standing firm like a rock?” The concept of motivation can be illustrated using a metaphor employed by Keller. In this analogy, motivation is described through a contrast between dry leaves and a rock. Some individuals associate motivation with a rock, as dry leaves are perceived as light, easily carried away by the wind, and influenced by external forces, whereas a rock represents stability, strength, a singular direction, and unwavering determination. Those with high intrinsic motivation are less susceptible to external influences, demonstrate greater perseverance in achieving their goals, and show resistance to change. On the other hand, most people

liken motivation to a leaf, as it can be unstable, frequently changing, unpredictable, and easily swayed by external factors—much like a pile of dry leaves scattered by the wind. According to this perspective, individuals with low motivation or those who rely heavily on external influences are more likely to be inconsistent and uncertain, much like dry leaves drifting aimlessly. This metaphor is particularly relevant to students, as their engagement in a lesson can be high and participatory one moment, yet in the next, they may become entirely disengaged [1].

As the metaphor suggests, there are conflicting perspectives on the nature of motivation. If motivation is as variable as dry leaves, designing and integrating it into education becomes highly challenging. Various motivational techniques can be developed, yet their effects are often short-lived. It is difficult to predict the motivational state of learners at any given moment. On the other hand, if a person's motivation is inherently strong and stable like a rock, identifying and modifying their motivational profile may be more straightforward, but inducing change can be considerably harder. For instance, it is unlikely that individuals will succeed in situations misaligned with their personal goals. In reality, as educators, we must approach instructional design as if we are working with both dry leaves and rocks, considering these contrasting characteristics throughout the motivation design process [1].

The aim of this section is to explain the concept of motivational design in education, present an example of the ARCS-V design model in nursing education, and offer recommendations for future research.

## **Instructional Design and Motivational Design**

Instructional design involves planning instruction based on the needs of all learners. When considering design as a process of turning ideas into reality, instructional design can be defined as the “idealized instruction” envisioned by educators.

Motivational design, on the other hand, is the process of organizing resources and strategies to help individuals—whether educators, behavior change advocates, or human performance managers—bring about positive changes in people's lives. More specifically, motivational design aims to align instruction with learners' goals, provide stimulating and appropriately challenging learning experiences, and shape how learners feel after successful learning outcomes.

As a systematic approach, motivational design relies on repeatable principles and structured processes. While it often appears as an abstract concept in the literature, it must be made tangible in educational settings so that the resulting behavioral changes in students can be measured effectively. Therefore, understanding motivation-based instructional models and selecting the appropriate one is essential in instructional design.

The literature identifies four primary Motivational Design Models: Person-Centered, Environment-Centered, Interaction-Centered, and Comprehensive (Omnibus) models [2-7].

### **Person-centered models**

Person-centered motivational models focus on the individual's personality and psychological structure, emphasizing intrinsic motivational characteristics. The goal is to bring about positive changes in an individual's motivational framework, thereby enhancing their learning experience and psychological adaptation.

An example of a person-centered motivational model is McClelland's Achievement Motivation Model. Studies based on McClelland's motivation theory primarily aim to measure achievement motivation, which is closely linked to an individual's desire to succeed, engagement in learning processes, and problem-solving abilities.

When the desire for achievement is supported by motivational strategies within the educational process, individuals demonstrate higher performance and increased learning outcomes [5].

### **Environment-centered models**

Environment-centered motivational models are based on the principles of behavioral psychology, explaining motivation through an individual's responses to external factors. According to this approach, motivation is shaped by external reinforcements, such as rewards and punishments.

An example of an environment-centered motivational model is Skinner's Programmed Instruction Model. According to Skinner [2,3,6]

- Learning occurs through responses to environmental stimuli.
- Positive reinforcement is the most powerful tool for enhancing learning.
- Negative reinforcement helps eliminate undesired behaviors.
- Behavioral control is achieved through systematic reinforcement and feedback mechanisms.

This model aims to shape student behavior through reinforcement-based strategies, ensuring that learning does not occur spontaneously but rather through structured environmental interventions [2,3,6]

### **Interaction-centered models**

Interaction-centered motivational models consider both individual motivational structures and environmental factors, aiming to establish a balance between intrinsic motivation and external influences. This approach recognizes that motivation is shaped through a dynamic interaction between the individual and their surroundings.

An example of an interaction-centered motivational model is Deci & Ryan's Self-Determination Theory (SDT) [8]. This theory explains how meeting the psychological needs of autonomy, competence, and relatedness influences motivation. SDT emphasizes the importance of intrinsic motivation in learning, work, and personal development, suggesting that when individuals feel in control of their actions, capable in their tasks, and connected to others, their motivation and overall performance improve [7,8].

### **Comprehensive (Omnibus) models**

Comprehensive motivational models focus on practical applications that have been proven effective in education and professional settings. Unlike theories that adhere to a single conceptual framework, these models integrate various motivational techniques that have demonstrated success. They are pragmatic and pedagogically rooted, incorporating both motivational design and instructional design strategies without distinction.

An example of an omnibus motivational model is Keller's ARCS Motivation Model (1979) [9]. The model is based on four key

components, forming the acronym ARCS (Attention-Relevance-Confidence-Satisfaction). Later, Keller expanded the model by adding a Volition (Eylem) factor, creating the ARCS-V Model, which helps sustain motivation and supports learners in actively engaging with the learning process. The Relevance component of the model highlights the importance of aligning instructional goals with learners' experiences and choices, ensuring meaningful connections. Encouraging course participants to share their experiences can further enhance engagement. Clearly defining learning objectives, structuring materials with increasing difficulty, setting realistic goals, and fostering independent learning contribute to a sense of confidence. Meanwhile, satisfaction strategies include verbal reinforcement, rewards, feedback, and avoiding negative influences, ensuring a positive learning experience [1,9-11].

The motivation of nurses and other healthcare professionals is critical for patient safety and health outcomes, job satisfaction, reduced risk of burnout, and professional development. John Keller's ARCS Motivation Model provides a significant framework for enhancing educational processes and supporting professional growth among healthcare workers (Başer & Anil, 2025). This model can effectively improve healthcare workers' learning motivation, enhance their sense of competence in clinical practice, and ultimately elevate the quality of patient care [12-16]. Although various models have been developed to enhance motivation in education, the ARCS Motivational Design Model has not been sufficiently implemented in healthcare education [12]. However, in high-stress environments such as critical care and emergency departments, where healthcare professionals frequently operate, sustaining motivation is crucial for ensuring the effectiveness of learning processes [14]. Although the use of the ARCS model in healthcare professionals' education remains limited in the existing literature, studies indicate that integrating this model into structured training programs has a positive impact on learning outcomes and professional development [12,14,15,17]. Studies in this field have predominantly been designed for undergraduate students. For instance, Liu *et al.* developed an interactive e-book based on the ARCS Motivational Model to support nursing students' learning of electrocardiograms (ECG) and evaluated its impact on learning outcomes. Compared to traditional learning materials, students using the interactive e-book experienced more efficient learning processes and reported higher satisfaction levels [17]. Alharbi *et al.* designed a study using the ARCS-V model to examine the impact of a culturally adapted High-Fidelity Simulation (HFS) scenario on nursing students' learning motivation in Kuwait. The findings indicated that the HFS scenario effectively enhanced both learning motivation and professional competence among nursing students. However, challenges such as technical infrastructure limitations and a shortage of qualified instructors posed obstacles to implementation [18]. There is limited research on continuing professional development (CPD) programs for nurses in the existing literature. Başer *et al.* developed, implemented, and evaluated an ARCS-based training program for pediatric emergency and intensive care nurses to assess its impact on professional development. The findings revealed a significant improvement in participants' knowledge levels and clinical skills. Moreover, motivational factors played a crucial role in the program's success, highlighting the importance of motivation-centered approaches in structuring training programs [14]. In continuing professional development (CPD) programs, analyzing participants' motivational needs and supporting them with appropriate strategies

enhances the sustainability of the learning process. The application of the ARCS model in nursing education can make learning more effective through engaging materials, real-life scenarios, self-efficacy enhancement activities, and reward mechanisms [14]. In this context, systematically integrating the ARCS model into healthcare education emerges as a critical necessity to enhance motivation and improve the overall efficiency of training programs for healthcare professionals [12,14]. However, before assessing the feasibility of this design, it is essential to consider the challenges that may arise during the training process and the factors influencing the sustainability of motivation. Acknowledging potential obstacles in advance allows for the development of proactive solutions to instructional design challenges, ensuring a smoother and more effective implementation process.

### **ARCS-V Recommendations in Motivation Design**

In the design of CPD programs, it is critical to analyze not only the content and skill acquisition but also the motivation of participants. It is largely the responsibility of training designers and trainers to increase or maintain participants' interest in learning, even in short-term programs. The success of programs depends not only on the quality of the information presented, but also on the effective implementation of strategies to increase motivation. Therefore, integrating appropriate motivational tactics into the educational process can make learning experiences more productive by encouraging participants' active engagement.

There are several fundamental challenges encountered in motivational design. One of the primary difficulties lies in the inherently multidimensional and dynamic nature of motivation. Individuals' motivation is influenced by both intrinsic and extrinsic factors, which may fluctuate over time [1]. For instance, while some individuals may have a relatively stable need for high achievement, other needs, such as physical safety or social acceptance, may become more dominant, pushing achievement-related motivations into the background [19]. There are two primary approaches to enhancing motivation: modifying an individual's attitudes and habits or adjusting environmental conditions to align with the individual's existing characteristics [7]. Humanistic approaches advocate for strengthening intrinsic motivation, whereas behaviorist approaches emphasize environmental modifications to enhance motivation. An interactionist perspective, on the other hand, suggests integrating both individual and environmental factors [1]. In the learning processes of healthcare professionals, instructional designs that balance intrinsic and extrinsic motivational elements have been shown to enhance educational outcomes. In this context, the widespread implementation of ARCS-based programs in healthcare education plays a critical role in ensuring the sustainability of professional development and strengthening clinical competencies [20,21].

There are some perceptual limitations regarding the role of educators in enhancing motivation. Many instructors may neglect motivation-boosting strategies, assuming that the responsibility for learning lies solely with the student [5]. However, the methods employed in the educational process, the instructor's engagement, and the feedback mechanisms can significantly influence student motivation. Therefore, systematic motivational design tools such as the ARCS model provide a valuable framework for enhancing learning processes [1]. By incorporating systematic approaches

like the ARCS-V model, training programs should offer engaging and fulfilling experiences to enhance nurses' motivation. This, in turn, supports both individual motivation and professional development, enabling more effective performance in critical care settings. Motivational design approaches are crucial for increasing nurses' participation in professional development programs and optimizing their learning experiences. Maintaining motivation among professionals working in high-stress healthcare environments is particularly essential, as it directly impacts the effectiveness of training programs. Motivation tends to be more variable in such professions, necessitating the dynamic planning of training programs with the recognition that motivational factors are not static [14]. The ARCS Motivational Design Model provides a strong framework for healthcare education by incorporating key components: capturing learners' attention (Attention), aligning content with personal and professional goals (Relevance), reinforcing expectations of success (Confidence), and ensuring a satisfying learning experience (Satisfaction) [9].

The application of this model in continuous professional development training for nurses enhances learning motivation and leads to higher success rates. For example, in a training program conducted in the field of pediatric emergency and intensive care, motivation strategies based on the ARCS model were employed, and an increase in participants' commitment to the learning process was observed [14]. The integration of clinical applications with learning content and the inclusion of motivational methods such as psychodrama positively influenced both the learning process and knowledge retention [13,14,18]. This study successfully utilized

the ARCS model and demonstrated its effectiveness in enhancing motivation. The ARCS-V model is an advanced version of the ARCS model, expanded with the "Volition" category, which specifically focuses on maintaining learners' motivation. While the original Keller model provides general process questions, the ARCS-V model offers more specific subcategories and detailed implementation questions, providing educators with greater guidance. Below, a revised ARCS-V design model (**Table 1**) presents an extended set of tactics and strategies that can be systematically integrated into all continuous professional development programs [1].

The ARCS-V model includes strategies designed to enhance motivation in continuous professional development programs for nurses. Considering the demanding workload and high-stress environments in which nurses operate, the following approaches should be incorporated:

- Increasing relevance by integrating real case scenarios and content linked to daily clinical practice.
- Emphasizing the value of training through clear explanations and connections to personal career goals.
- Establishing success expectations and ensuring transparency in assessment processes.
- Recognizing participant achievements at the end of training (e.g., feedback, badges, certificates).
- Implementing strategies that encourage the transfer of learning into workplace settings.

**Table 1.** ARCS-V Model in Continuing Professional Development Programs for Nurses.

ARCS-V Main Categories	ARCS-V Subcategories	Design and Implementation Process Questions	Tactics and Strategies (Adapted for Nurses)
<b>Attention</b>	<ul style="list-style-type: none"> <li>• Perceptual arousal</li> <li>• Inquiry arousal</li> <li>• Variability</li> </ul>	<ul style="list-style-type: none"> <li>- How can I capture the nurses' attention?</li> <li>- How can I sustain their attention throughout the training?</li> <li>- How can I create an engaging introduction at the beginning of the program?</li> </ul>	<ul style="list-style-type: none"> <li>- Creating a WhatsApp group to initiate interaction before the training, sending a welcome message.</li> <li>- Using videos, posters, striking examples, and case posters to emphasize the program's importance.</li> <li>- Conducting a pre-test at the beginning of the training to spark curiosity.</li> <li>- Organizing engaging discussions and pre-session psychodramatic activities.</li> <li>- Presenting compelling case examples and case-based discussions.</li> <li>- Conducting simulations with virtual patient scenarios.</li> <li>- Increasing engagement by implementing interactive games or puzzles at the beginning of the training.</li> <li>- Presenting short case studies on patient safety errors and discussing possible solutions.</li> </ul>
<b>Relevance</b>	<ul style="list-style-type: none"> <li>• Proximity</li> <li>• Goal orientation</li> <li>• Motive Matching</li> </ul>	<ul style="list-style-type: none"> <li>- How can I relate the training content to nurses' daily work practices?</li> <li>- How can I demonstrate that the training aligns with their professional goals?</li> </ul>	<ul style="list-style-type: none"> <li>- Emphasizing the importance of the program and aligning it with nurses' expectations.</li> <li>- Increasing participation with impactful patient scenarios (e.g., "What if this happened to you?").</li> <li>- Developing modules that include real case analyses and discussion questions.</li> <li>- Encouraging nurses to share examples from their real work experiences.</li> <li>- Highlighting how the training contributes to career development and patient care.</li> <li>- Ensuring that case studies used in training connect with nurses' past experiences.</li> <li>- Allowing nurses to experience their own roles in simulation environments.</li> <li>- Organizing group activities on effective empathy strategies in patient and family communication.</li> </ul>

<b>Confidence</b>	<ul style="list-style-type: none"> <li>• Expectancy for success</li> <li>• Learning conditions</li> <li>• Personal control</li> </ul>	<ul style="list-style-type: none"> <li>- How can I ensure that nurses believe they will succeed in the program?</li> <li>- How can I make the training process transparent?</li> </ul>	<ul style="list-style-type: none"> <li>- Clearly explaining the course structure, success criteria, and evaluation methods at the start of the training.</li> <li>- Informing participants in advance about success criteria, such as certification requirements and assessment methods.</li> <li>- Organizing psychodrama sessions at the end of each day to enhance self-confidence.</li> <li>- Demonstrating progress through pre-test and post-test applications.</li> <li>- Sharing step-by-step guides, infographics, and process maps to make the learning process transparent.</li> <li>- Measuring progress with online quizzes or exams and providing instant feedback.</li> <li>- Boosting motivation by sharing daily or weekly achievement summaries.</li> <li>- Organizing small group discussions where nurses can share their previous experiences.</li> <li>- Encouraging self-assessment through reflective evaluation forms.</li> </ul>
<b>Satisfaction</b>	<ul style="list-style-type: none"> <li>• Natural consequences</li> <li>• Positive outcomes</li> <li>• Equity</li> </ul>	<ul style="list-style-type: none"> <li>- How can I provide opportunities for nurses to apply their newly acquired knowledge?</li> <li>- How can I help them maintain motivation after the training?</li> </ul>	<ul style="list-style-type: none"> <li>- Collecting feedback at the end of each face-to-face session.</li> <li>- Recognizing achievements by awarding digital badges or certificates upon completion.</li> <li>- Organizing feedback sessions at the end of the training, allowing nurses to share their reflections.</li> <li>- Incorporating psychodrama activities when possible to enhance emotional fulfillment.</li> <li>- Demonstrating the practical application of newly acquired knowledge in patient care.</li> <li>- Explaining how the training content directly correlates with patient satisfaction.</li> <li>- Organizing reward-based knowledge competitions at the end of the course to reinforce learning.</li> <li>- Sharing real-life success stories to emphasize the long-term impact of the training program.</li> </ul>
<b>Volition</b>	<ul style="list-style-type: none"> <li>• Strong intentions</li> <li>• Initiation of action</li> <li>• Self-regulation</li> </ul>	<ul style="list-style-type: none"> <li>- How can I encourage nurses to apply their learning in the workplace after training?</li> <li>- How can I ensure they sustain their motivation?</li> </ul>	<ul style="list-style-type: none"> <li>- Using case studies to encourage participants to reflect on how they can integrate their learning into daily practice.</li> <li>- Facilitating goal-setting exercises to help participants establish personal learning objectives.</li> <li>- Providing a digital platform where participants can track their development.</li> <li>- Creating an alumni network to maintain engagement and foster continued professional networking.</li> <li>- Conducting follow-up evaluations to assess how participants are implementing their learning in practice.</li> <li>- Collaborating with hospital management to track how nurses apply their new skills in patient care.</li> <li>- Organizing mentorship sessions to support continued professional development.</li> <li>- Reinforcing learning by sharing reminders and review materials for 1-3 months after the training.</li> </ul>

**Note:** This table was adapted by the author for a continuing professional development program using the Keller ARCS-V Design Model [4].

By applying these principles, the ARCS-V model can be optimized to provide a more effective and sustainable learning experience in nurses' professional development processes.

### Future Research Recommendations

Since healthcare professionals, especially nurses, work under high-stress conditions, integrating emotional support into training programs enhances motivation. Motivation should be further reinforced through individualized and group-specific learning approaches. The ARCS-V model should be adapted to match the learning preferences and pace of individuals and groups, ensuring a tailored educational experience. Before designing a training program, it is crucial to assess and define learner needs and structure the program accordingly. Studies conducted with nurses suggest that

incorporating emotionally supportive content into the ARCS-V model can improve resilience.

Motivation must be sustained not only during the learning process but also in professional practice. To ensure long-term motivation, more emphasis should be placed on the transition to action, with mentorship programs and collaborative networks facilitating the application of learning in clinical settings.

Interprofessional learning environments enhance motivation and improve patient care quality. The ARCS-V model should incorporate strategies that promote collaborative learning among different healthcare professionals. Joint training programs and simulation-based learning should be implemented to encourage interdisciplinary education.

With the increasing digitalization of healthcare education, there is a growing need for interactive content to enhance learner motivation. The ARCS-V model should be enhanced with web-based training, virtual simulations, and augmented reality (AR) applications to improve engagement and learning outcomes.

Future applications of the ARCS-V motivational design should integrate digital education tools, personalized learning, feedback mechanisms, and interprofessional collaboration to make training more effective. Motivational design strategies should be developed in line with these recommendations to enhance the professional development of healthcare workers and improve patient care quality.

## Conclusion

Motivational design is an approach aimed at understanding the complex and multidimensional nature of motivation and systematically enhancing it. An effective motivational design requires understanding individuals' intrinsic drives, analyzing environmental factors, and strategically integrating these elements.

Is motivation as unstable as dry leaves or as solid as a rock? It can be both, depending on the circumstances. Therefore, motivational design should consider these dynamics and develop adaptable strategies accordingly.

The application of motivational design in nursing education not only enhances nurses' learning motivation and job performance but also contributes to providing patients with higher-quality healthcare services and improving patient care quality. By systematically integrating the ARCS-V model, nursing education programs can better address the learning needs of nurses while promoting the continuous development of the nursing profession.

When designing nursing education programs, it is essential to incorporate the ARCS-V model, ensuring interactive and profession-specific content that directly relates to clinical practice.

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