# ARCS Model of Curiosity

Middle School     High school     Elementary Education

## Intervention Overview

One way to increase your students' motivation to learn and love of learning is to use the ARCS curiosity model developed by John Keller(2010). The ARCS model defines curiosity as a product of attention, relevance, confidence, and satisfaction. The ARCS curiosity model can be implemented into any curriculum. Hattie and Zierer (2018) argue that it is the role of the teacher "to set the tone in the class and to motivate students, not vice versa" and that this can be accomplished using strategies from the ARCS model (p. 50).
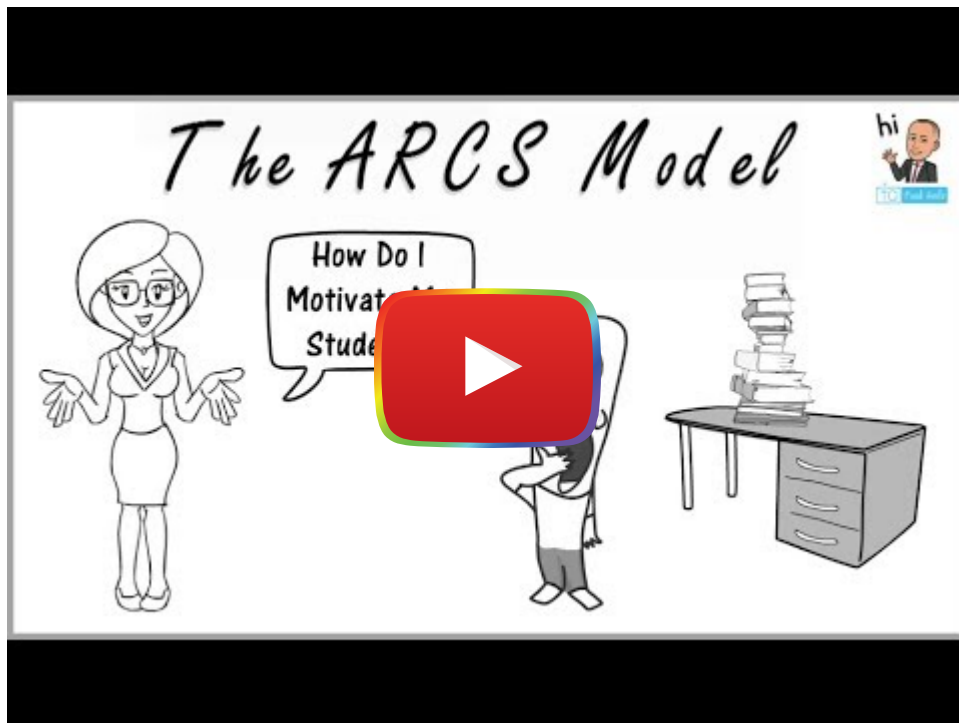
[Watch on YouTube](https://www.youtube.com)

A lesson that stimulates **ATTENTION** harnesses students' curiosity and interest. A **RELEVANT** lesson is driven by relating to students' diverse needs and experiences. A lesson that builds **CONFIDENCE** involves scaffolding meaningful tasks and a lesson that prompts **SATISFACTION** builds students' sense of achievement.  Each factor is a prerequisite for the others. Without sustained attention, students won't be able to understand the relevance of a subject to their lives. Relevance builds confidence which in turn leads to greater satisfaction.

We can increase attention by introducing the subject and presenting the material in an engaging way. We can increase relevance by giving students choice, helping them understand how this knowledge is applicable in their lives, or by "introducing a curiosity-arousing situation which has at least some familiarity to the learner (that is, the learner already has some knowledge about it)" (Arnone & Small, 1995, p. 9). We can increase students' confidence by selecting appropriate challenges and building positive expectations. Lastly, we can increase students' satisfaction by helping them recognize the feelings of accomplishment and pleasure that come from learning new things. A list of additional ways to practice the ARCS model in your classroom is included below. Guided questions taken from Keller (2010,2016). Learning strategies adapted from Keller (2010) and LearningTheories(2022).

## Intervention Guide

|  | Guiding Questions for Educators | Learning Strategies |
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| Attention | • "Am I excited about this learning experience and how I can make it interesting?"<br>• "Are the learners going to be interested? What tactics will stimulate their curiosity and interest?" | Activities that involve novelty, inquiry and variety such as: humor, puzzles, games, roleplay, problem-solving, brainstorming, mind-mapping, audiovisual content, varying presentation, discussion, storytelling. |

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| Relevance | • "Do I believe that this learning experience will be valuable for my learners?"<br>• "Will learners believe it is valuable? What can I do to help them believe it is important?" | Activities that align with students' goals, needs and experiences such as: modeling, building on prior skills, providing examples that students will recognize, having students give examples from personal experiences, have students ask themselves "How will the subject matter help me today?...tomorrow?", student choice, guest speakers. |
| Confidence | • "Am I confident in my ability to lead this learning experience effectively and interestingly?"<br>• "Will the learners feel confident about their ability to learn this? What do I need to do to help them be confident?" | Activities that involve goal-oriented scaffolding such as: allowing students to choose goals, providing small and manageable steps for goal achievement, consistent feedback and praise, student choice in assessment of learning. |
| Satisfaction | • "Do I expect to have positive feelings about this learning experience?"<br>• "What can I do to help the learners feel good about their experience and desire to continue learning?" | Activities that foster intrinsic and extrinsic motivation such as: providing some external rewards but avoid over-rewarding, providing frequent constructive feedback, giving students certificates for skill mastery, and having prior students share their learning experiences. Praise and feedback should be equitable. Praise should be effort focused, rather than ability focused. |

## Does it work?

Feng and Tuan (2005) assessed the effectiveness of integrating the ARCS model into chemistry lessons on high school students' motivation and engagement in the lessons. Fifty-one 11th grade students participated, half assigned to the lessons using the ARCS model and the other half to a control group with traditional lecture-style lessons. Students in the ARCS model classroom reported higher levels of learning motivation following the intervention. Students had a greater sense of self-efficacy and confidence, more frequent use of active learning strategies, and a deeper understanding of the value of science learning. Also, students reported an improved ability to pay attention and be engaged for the duration of the class period (Feng & Tuan, 2005). A meta-analysis of 38 controlled experiment studies of ARCs model use in classroom instruction, with a total effect size of over 8000 students from grades K-12 and higher education, also found that the ARCS model has a positive effect on both student motivation and academic achievement (Gosku & Islam Bolat, 2021).

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