

# Quick Tips for Use of Audience Response Systems (ARS)



UNIVERSITY OF TORONTO  
FACULTY OF MEDICINE

Office of Continuing Education  
and Professional Development  
Faculty of Medicine  
University of Toronto  
500 University Avenue, Suite 650  
Toronto, Ontario M5G 1V7

Phone: 416.978.2719  
Toll Free: 1.888.512.8173  
Fax: 416.971.2200

Email: [info.cepd@utoronto.ca](mailto:info.cepd@utoronto.ca)  
Website: [www.cepd.utoronto.ca](http://www.cepd.utoronto.ca)

# Quick Tips for ARS

## What is an ARS?

An ARS is an electronic device consisting of a set of handheld wireless key pads connected through radio frequency to a laptop computer. They are commonly used in university classrooms and continuing education settings for large group teaching. The presenter asks the audience a question to which there is a range of possible responses. The responses are compiled by computer software and displayed graphically through a projection system onto a screen. Results are available within 20 seconds. Answers are also stored electronically for later viewing.

ARS' can be used to quickly poll participants' opinions, administer quizzes, conduct debates thus engaging participants in collaborative and active learning.

## Why use them?

The purpose of any ARS is to enhance learning by keeping people actively involved. Educational research has demonstrated that most people are not able to pay attention in lectures for longer than 7 minutes. In addition, the amount of material they are able to retain is quite limited. Traditional lectures and didactic methods are useful in conveying information to larger number of learners and thus appear efficient however, without some help by actively engaging the audience in learning, their effectiveness is questionable.

If the purpose of CE is to affirm and or change practice behaviour- we must increase our ability to ensure the use of learning methods that are effective and applied.

### The use of an ARS is of benefit to the learner by:

- Keeping participants involved and thus attentive
- Providing information on knowledge gaps
- Improving retention of knowledge through immediate application
- Increasing satisfaction with learning
- Providing anonymous feedback

### They are of benefit to the lecturer by:

- Providing immediate information on learning needs and "gaps" of the audience
- Allowing for adaptation of material to suit level of audience
- Providing opportunity for corrective feedback
- Increasing and maintaining rapport with audience

## Is there evidence that they make a difference in learning outcomes?

Yes! Studies have shown that audiences using ARS systems such as I-clickers rate the quality of the presentation and the quality of the speaker more highly than presentations not using interactive techniques. Audiences also report a higher ability to pay attention during presentations. (Freeman et al 2005, Miller et al 2003)

Studies have also demonstrated that participants have an improved ability to retain information when ARS are used. (Horowitz 1988, Gagnon and Thivierge 1997). In fact knowledge tests have shown that there is an increase in post test results from 61% just lecture, 93% using interactive techniques and 96% using an ARS. (Schackow et al 2004)

## Various Uses of ARS:

ARS can be used to assess learning at different stages in the learning process, as summarized below.

<b>Pre-Assessments- At the beginning of a presentation:</b>	<p>You can find out what participants already know about your topic: E.g. present a brief case relevant to your topic and create a true or false statement - agree, disagree, no opinion</p> <p><b>or</b></p> <p>You can present a question to which there can be a range of responses. You can also determine participants' misconceptions about a topic or issue.</p>
<b>Mid-Topic Assessments- In the middle of mini lectures or before another concept is presented:</b>	<p>Do participants understand the principle of what is being presented?</p> <p>How (if at all) is their thinking changing?</p>
<b>Post- Assessments- At the end of a ses- sion:</b>	<p>How have participants level of knowledge changed?</p> <p>How have their opinions or attitudes changed?</p> <p>How has the information influenced what they may choose to do in practice as a result of the presentation?</p> <p>How do they rate (evaluate) the session?</p>

## Now that we have convinced you to try an ARS – how do you go about using them?

### Where to get them:

Most conference service organizations can provide you with the equipment. The Office of CEPD can direct your enquiries as can the Discovery Commons at the University of Toronto. (Phone numbers needed here)

### Before your session:

Think about how i-clicker information could be of most value to you and your audience.

### At the session:

A technician is usually required unless you have the software necessary and have experience in the use of the program. Have the technician explain to your audience what the i-clickers are how to use them and have them activate the system by asking a simple question such as:

"the weather today is":

1. Sunny
2. Cloudy
3. Rainy
4. I don't know.

Explain to the audience why you are using the clickers – e.g. "it is helpful to me to get an idea of what my audience is thinking as I present and whether I am on the right track." It also gives you more the opportunity to be more involved in the presentation.

## Sample questions:

The following are examples you may find helpful when designing your own questions.

The percentage of incidentally detected renal cancer is approximately:

1. 10%
2. 25%
3. 50%
4. 75%
5. 90%

What percentage of adrenal adenomas have attenuation values of <10HU on non contrast CT?

1. 95%
2. 70%
3. 33%
4. 15%
5. All adenomas have attenuation values of <10HU.

Choose the best answer:

1. The Leafs are likely to win the Stanley Cup this season
2. The papillary subtype of renal cancer is generally associated with poor prognosis
3. Smaller solid renal masses are more likely to be benign than larger solid renal masses
4. Percutaneous renal biopsy is associated with a high rate of complications

Which of the following sentences are correct regarding MRI and adrenal adenomas?

1. T2 sequences help distinguish adenoma from non-adenomas.
2. MR is highly sensitive in characterizing adenomas with a non contrast CT attenuation values over 30HU.
3. Chemical and shift imaging is most helpful
4. MR is not useful in distinguishing adenomas from non adenomas.

## Creating and maintaining dialogue with the audience

After you present your questions it will take less than a minute for a bar graph to appear on your screen – it is very important to respond to the answers! Provide the correct answer and why it is correct. If there is a percentage of wrong answers explain why you think differently and if time allows for participants to argue if they would like. Remember the anonymity of response provides safety though - if no one wants to explain – let it go.

You can also use true/false questions or questions to create a debate – “how many think this – how many think that?” “Who would like to present why they think yes – no? ”

As you gain more experience with the clickers so will your comfort to create questions “on the fly” increase.

## Contacts:

If you would like assistance in using the ARS or developing other means to actively engage learners in large groups, please feel free to consult one of CEPD’s educational consultants:

**Kate Hodgson** Phone: 416.978.4957 E-mail: kd.hodgson@utoronto.ca

**Jane Tipping** Phone: 416.946.7904 E-mail: jane.tipping@utoronto.ca

Do you have examples, comments, information or references you would like to share and see added to CEPD Quick Tips? Please contact Jane Tipping or Kate Hodgson, Education Consultants with the Office of CEPD.

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