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The Ticket to Student Concept Retention: A Revised Version

Kent Divoll  
*University of Houston-Clear Lake, divoll@uhcl.edu*

Sandra Browning  
*University of Houston-Clear Lake, browning@uhcl.edu*

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The Ticket to Student Concept Retention: A Revised Version

KENT DIVOLL
SANDRA BROWNING

UNIVERSITY OF HOUSTON - CLEAR LAKE
1) Activating your schema
2) What is the TtR2?
3) Lit. review/Framework
4) Our Prior Work
5) TtR v CAT

6) Methods
7) Results
8) Discussion
9) Conclusions/
   Recommendations
10) Thank you/e-mail
Think-Pair-Share

• Discussion what you know about Classroom Assessment Techniques (CAT) such as the one minute paper and the half sheet response?

• Share....
So what is the Ticket to Retention2 anyway?

- Simple answer....
- A handout with 3-5 focused questions.
- Highlights main points for the session.
- Students answer questions during class.
- End of class- pair with two people to...
  - Share answers, listen to partners answers, compare/contrast answers, create a final answer.
Let’s try the Ticket to Retention2

- Please answer the TtR questions on your sheet during Sandra’s session on shapes.

- Turn to your neighbor and tell all you know about polygons.
Important! Please use this information to answer the questions on your hand out.

- **Rhombus** - a quadrilateral with all sides congruent.

- **Kite** - a quadrilateral with two distinct pairs of congruent adjacent sides.

- **Parallelogram** - a quadrilateral with two pair of parallel sides.

- **Trapezoid** - a quadrilateral with only one pair of parallel sides.
What did Sandra do during the session with the TtR2?

- Alerts students to main concepts (voice variety and phrase).
- Present the information.
- Can include active learning.
- Agenda or question to activate schema.
Ticket to Retention at the end of class.

- Two ways... structured versus unstructured.

1. Find ONE partner.
2. Say your answers to questions 3, 4.
3. Listen to your partner’s answers.
4. Revision Notes-
   - “Person 1”- anything you want to add to your answer as a result.
   - Repeat with person 2.
- Create a best answer “Rewrite your answers.”
Review of Literature

- **Aim of teaching** - make learning possible (Ramsden, 1992).

- **CAT or closure activities** can ensure understanding of key concepts (Angelo & Cross, 1993; Cross, 1998; Light, 1990; McGlynn, 2001; Richlin, 1998; Steadman & Svinicki, 1998; Wlodkowski, 2008).

- **Missing** - strategies that reinforce **student retention** of key concepts.
Turn to a partner....

- What did you (the student) do during the ticket?
- How many times did you hear or interact with the material? (fingers)
Theoretical Framework

- Lecture style/transmitter of knowledge dominates college (Bligh, 1998; Lammers & Murphy, 2002; Wang & Farmer, 2008)
- Shift to facilitator of knowledge (Barr & Tagg, 1995).
- College teaching - focus on strategies that help students **retain** information.
- One method is *Ticket to Retention*.
Prior research suggests that students retain 88-89% of the information when TtR is implemented (Divoll & Browning, 2010) - no compare group.

Old version- without the compare and rewrite.

See your sheet.
Our Prior Research 2

- One class 21 students
- 2 groups – Alternated TtR after 5 weeks (1 week all)
  - Midterm With ticket 86 Without Ticket 73 = 13 points
  - Final With Ticket 90 Without Ticket 85 = 5 points
  - Total With Ticket 89 Without Ticket 81 = 8 points
- No Pretest
Ticket to Retention2 Versus CAT

- Similar to one minute paper and half-sheet response.

- *Ticket to retention* (TtR)- combined ticket to leave, the one minute paper, the half-sheet response, and think-pair-share strategies.

- Write answers to 3-5 questions, share answers with two people, listen to two people share their answers.
Ticket to Retention

• Different in three significant ways
  ○ Students asked questions specifically focused on key concepts.
  ○ Not “what are three things that you learned...”
  ○ Reframes the philosophy of the professor as provider of knowledge to professor as facilitator of knowledge.
  ○ Ticket to retention includes interacting with peers. Students review concepts 5 times in short time... 7?
Methodology

1 - 15-week class (n=17)  
2 - 4-week class (n=26; n=27)

- 2 groups - per class.
  - Group A - TtR weeks 2-6;
  - Group B - TtR weeks 8, 9, 11, 12, and 13.
  - Week 7 - both TtR.

Data sources

- Ticket to retention sheets students completed
- Midterm (short answer) – surprise/not count – no studying?
- Final (multiple choice) – surprise/not count – no studying?
- Student questionnaire
- Pretest
Data Analysis Methods

- Reviewing the aforementioned data sources to create categories and determine patterns
- Comparative approach to discover evidence from the categories and patterns
- Mid-term and final: with TtR and without TtR
- Pretest versus midterm and finals with and without the TtR (change score)
## Midterm/ Final Results

### Table 1

**Mean Scores on Assessments**

<table>
<thead>
<tr>
<th>With TtR</th>
<th></th>
<th></th>
<th></th>
<th>Total</th>
<th>Without TtR</th>
<th></th>
<th></th>
<th></th>
<th>Total</th>
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<tbody>
<tr>
<td>Section</td>
<td>S1</td>
<td>S2</td>
<td>F3</td>
<td></td>
<td>Section</td>
<td>S1</td>
<td>S2</td>
<td>F3</td>
<td></td>
</tr>
<tr>
<td>Midterm</td>
<td>85</td>
<td>84</td>
<td>82</td>
<td>84</td>
<td>Midterm</td>
<td>68</td>
<td>69</td>
<td>66</td>
<td>68</td>
</tr>
<tr>
<td>Final</td>
<td>88</td>
<td>85</td>
<td>82</td>
<td>86</td>
<td>Final</td>
<td>87</td>
<td>80</td>
<td>81</td>
<td>83</td>
</tr>
</tbody>
</table>
Pretest/Midterm/Final - Change Scores

Table 2

Mean Change Scores

<table>
<thead>
<tr>
<th>Section</th>
<th>With TtR</th>
<th>Without TtR</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>S1</td>
<td>S2</td>
</tr>
<tr>
<td>Pre/Mid</td>
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<td>26</td>
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<tr>
<td>Pre/Final</td>
<td>22</td>
<td>29</td>
</tr>
</tbody>
</table>
Student Comments

- Don’t make it rushed.
- Don’t announce things during the ticket because we will miss out.
- Leave time for the ticket so we don’t get out late.
- Recognized benefits of the strategy.
- “Enjoyed ticket to retention because it really help me to learn information and show ideas.”
Discussion

- Effect from TtR - more pronounced on short answer questions

- Midterm control vs experiment (midterm)

- Final (multiple choice) limited results.
  - Study design? Length of time between TtR and test?
Conclusions

- “Ticket” - potential to increase student retention
- Multiple choice v short answer
- Ticket to retention attempts to change the role of the college professor from a transmitter of knowledge to facilitator of knowledge.
Think-Pair-Share-Repair.

1. Share how you could use this in your teaching.

2. What challenges could occur from the TtR2?

3. How does the TtR 2 match what we know about students learning? (Hint: Think about the 7 principles of learning.).
Recommendations

- Give time for TtR
- Target your questions to what you want them to learn
- Observe the students to make sure they are actually doing it
- Look over TtR sheets to determine any issues
- Revisit if necessary
E-mail addresses

- Kent Divoll: divoll@uhcl.edu
- Sandra Browning: browning@uhcl.edu
- Looking for people who are interested in trying the TtR to joins us for our Google group.
- Previous results
  http://academics.georgiasouthern.edu/ijsotl/v4n2/articles/PDFs/DivollBrowning.pdf
- Or google Ticket to Retention
3. Define parallelogram and explain how a parallelogram is different from a kite.

4. Define trapezoid and explain how a trapezoid is different from a parallelogram.
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