

# Self-Regulated Learning in Practice: a comparison of national board certified teacher librarians and non-national board certified teacher librarians in the United States

---

**Dr. Kasey L. Garrison**

Lecturer  
Teacher Librarianship Program  
School of Information Studies  
Faculty of Education  
Charles Sturt University  
Locked Bag 588  
Wagga Wagga, NSW 2650  
Australia  
[kgarrison@csu.edu.au](mailto:kgarrison@csu.edu.au)

**Dr. Robin S. Spruce**

Lecturer  
School of Education and Leadership Studies  
College of Arts and Sciences  
University of San Diego  
5998 Alcalá Park  
San Diego, CA 92110  
United States of America  
[rspruce@sandiego.edu](mailto:rspruce@sandiego.edu)

**Abstract**

*In the United States, educators have the opportunity to apply for National Board Certification (NBC), a rigorous process that awards them the highest recognition of teacher mastery and accomplishment in the nation. A core proposition of NBC, the management and monitoring of student learning, is strongly related to self-regulated learning (SRL) and the role of the teacher librarian (TL). This research investigates the differences and similarities between the application of SRL strategies in the teaching of two groups of TLs in the US: five with NBC and five without NBC. Using interviews and teaching observations, researchers found similar practice of SRL strategies by both groups in their teaching. However, in the interviews, the TLs with NBC were better able to articulate and provide context for how they teach students SRL strategies. These*

*findings support research from other scholars regarding NBC (Johnson, 2009; Strong et al., 2007; Unrath, 2007).*

**Keywords:** Metacognition, Self-regulated Learning, National Board Certified Teachers, Teacher Librarian, National Board Certification

Countries around the world have differing ways of recognizing talented educators. There are many awards available where teachers are nominated by students, colleagues, and their surrounding communities. Some examples of such programs include the National Teacher Award in South Africa, the Roll of Honor Award given to educators demonstrating outstanding service in the Jamaican Teachers' Association, and the Global Teacher Prize awarded to nominated teachers from around the world.

In addition to awards, some countries have special programs where teachers provide extensive support and evidence to demonstrate their mastery. In Australia, teachers apply for recognition as Highly Accomplished and Lead Teachers, submitting artifacts and evidence of their mastery to the Australian Institute for Teaching and School Leadership (AITSL, 2014). (For a firsthand account of this process, see Uther & Pickworth, 2014.) Teachers in the United States apply for National Board Certification (NBC), one of the highest recognitions an educator can earn. The application process is very rigorous and enlists applicants to demonstrate mastery of Five Core Propositions relating broadly to professional practices and applications of teaching and learning. Proposition 3 states: "Teachers are responsible for managing and monitoring student learning" and stresses the need for teachers to utilize divergent teaching strategies and instructional techniques with their students (National Board Professional Teaching Standards, 2013). In this paper, we consider the role of the teacher librarian (TL) as related to this proposition using the lens of self-regulated learning. The main purpose of this research was to examine how National Board Certified Teacher Librarians (NBCTLs) and non-NBCTLs apply self-regulated learning strategies in their teaching and to investigate the differences between the two groups.

### **Literature Review**

Self-regulated learning (SRL) is the ability to plan, monitor, and evaluate one's own learning processes. Van den Boom, Paas, and Merriënboer (2007) assert "there is a broad consensus that SRL comprises many aspects related to students' learning, such as goal setting, using effective strategies to organize learning, monitoring, performance, self-awareness, motivation and holding positive beliefs about capabilities" (p. 533).

After an extensive search of literature on SRL and NBCTs, no direct studies were discovered. However, research about NBCTs and patterns in their teaching practices reveal connections to SRL. For example, reflection is an integral part of SRL as learners monitor and consider their own learning processes and progress. In a self-report survey study of NBC art teachers, Unrath (2007) found that these teachers labeled themselves as reflective practitioners before undertaking the certification process, but that they noted an increase in their reflective practices after engaging in NBC. Johnson (2009) found similar results regarding reflection in her sample of 57 teachers' practices post certification. NBCT participants in another study also noted how the certification process reinforced to them the

importance of developing critical thinking capabilities in their students (Scheetz & Martin, 2006). Both reflection and the ability to think critically are important to fostering SRL.

Researchers examining differences between NBCTs and teachers without this specialized certification show mixed results regarding student achievement. Some results indicate superior student achievement using competency measures or standardized achievement data (Phillips, 2008; Vandervoort, Amerine-Beardsley, & Berliner, 2004). For example, in a study comparing NBC and non-certified physical education teachers, the students of NBCTs outperformed students of non-NBCTs on measures of motor skill performance, cognitive fitness knowledge, outside of class participation and health related fitness levels (Phillips, 2008). Conversely, a comparison study of 27 NBCTs and 27 non-NBCTs teaching Kindergarten through Grade 8 found that student scores on end of the year standardized tests did not significantly differ (Rouse, 2008). Finally, data from a larger study incorporating statistical analysis of standardized test variables and qualitative data including teacher interviews and classroom observations found that while NBCTs' dispositions and pre-instructional characteristics were higher quality than non-NBCTs, no differences were observed in classrooms between the two groups (Stronge et al., 2007). Findings from these studies suggest there is a need to explore both qualitatively and quantitatively NBCTs and those without this certification to better identify what factors influence teachers to pursue certification and what influence the process itself may have, or not, on their classroom practice. Specifically, this study aims to illuminate how teacher librarians with NBC and those without differ in their explanation and practice of SRL in the school library.

## Methods

This study used mainly qualitative methods to study the teaching and learning practices of NBCTLs and non-NBCTLs in regards to their practice of SRL as teachers and learners. We compared two groups of five NBCTLs and five non-NBCTLs working in primary and secondary schools in the mid-Atlantic area of the United States. The ten participants volunteered to be interviewed and observed while teaching after completing an online questionnaire for a preliminary stage of this research reported in Garrison and Spruce (2013). The information in Table 1 includes demographic and descriptive information about the ten participants.

NBCTL Status	Participant	School Level	Highest Degree	Gender	Age	Years of Education Experience (Library/Total)
NBCTLs	Naomi	Elementary	Masters	F	Under 35	9/9 years
	Eleanor	Middle	Masters	F	Over 45	15/18 years
	Violet	Elementary	Masters	F	Between 35-45	23/23 years
	Incognito	Secondary	Masters	F	Over 45	15/31 years
	Ruby	Secondary	Masters	F	Over 45	34/34 years

NBCTL Status	Participant	School Level	Highest Degree	Gender	Age	Years of Education Experience (Library/Total)
Non-NBTLs	Sydney	Elementary	Masters	F	Between 35-45	4/14 years
	Owl	Secondary	Masters	F	Over 45	2/20 years
	Jacqueline	Elementary	Masters	F	Between 35-45	7/20 years
	JDL	Secondary	Masters	M	Between 35-45	16/20 years
	Tessa	Middle & Secondary	Masters	F	Over 45	26/26 years

Table 1: Characteristics of Teacher Librarian Participants

Each participant engaged with one of the researchers in an approximately one hour interview and two of their library lessons were observed by one or both of the researchers as well. The interview and observation protocols were created by one of the researchers for her dissertation research using a similar research design studying classroom teachers (Spruce, 2012). See Appendix A and B for these protocols. The interview includes 16 questions about teacher perception, understanding, and application of SRL and was developed from Zimmerman's SRL model (2008). The observation protocol lists 18 observable behaviors teachers might perform to facilitate student development of SRL across three phases of learning: Planning, Monitoring, and Evaluating (Zimmerman, 2008). These behaviors were evaluated using a scale ranging from zero to four with zero meaning the behavior was not observed and four meaning there was a strong application of the behavior observed. The observation protocol was designed using Zimmerman's model of SRL (2008) and also Schraw's Metacognitive Checklist (1998) as guides.

The scores from the observation protocol are the sole quantitative data used in this study. The participants' were rated in both observations and then the average score of the two observations were taken for each of the three stages of learning and the overall mean. Next, the researchers used an inductive content analysis approach to investigate the patterns in qualitative data (Patton, 2002). In this method, themes and patterns emerge and become categories; researchers then code the data using these categories. In this study, we analyzed the interview transcripts first to find recurring themes and patterns in the participants' responses. After analyzing the interviews, the codes listed and defined in Table 2 emerged from the data.

Code	Definition
Visualization	• Visual or graphic representation of concepts or the learning process to aid in imagining a topic or idea

Code	Definition
Chunking	<ul style="list-style-type: none"> <li>Dividing tasks into smaller steps in order to prepare for and manage learning</li> </ul>
Modeling	<ul style="list-style-type: none"> <li>Scaffolding student learning by literally showing them how to do something, often described as a thinking aloud to monitor internal processes</li> </ul>
Reflection	<ul style="list-style-type: none"> <li>The thinking that occurs after a learning event or activity, a deliberate consideration and evaluation of the learning process</li> <li>Challenges to implementing time for reflection also emerged</li> </ul>

Table 2. Codes Emerging from Interviews Applied to Observations

The researchers then used these codes to analyze the observation field notes and protocol to investigate how the participants translated their interview reflections into their practice. This involved searching for particular instances where these codes were implemented. The following discussion of the results will examine first similarities and then differences with the NBCTLs and non-NBCTLs for each of the four codes, integrating the interview and observation data.

## Results

Analysis of the interview and observation data reveals mixed results of the knowledge and application of SRL strategies across the two sample groups. The observation scores for the ten participants are included in Table 3 across the three stages of learning including totals for each individual (far right column) and each group labeled in bold.

Status	Participants	Planning(4)	Monitoring(4)	Evaluating(4)	Totals(12)
NBCTLs	Naomi	1.54	1.89	0.3	3.73
	Violet	1.8	2.64	1.5	5.94
	Eleanor	2.75	4	1.6	8.35
	Incognito	1.42	1.79	0.4	3.7
	Ruby	1.3	2.5	0.5	4.3
<b>NBCTLs Mean Totals</b>		<b>1.76</b>	<b>2.56</b>	<b>0.86</b>	<b>5.20</b>
Non-NBCTLs	Owl	1.08	2.64	0	3.72
	Sydney	1.42	1.79	0.5	3.71
	Tessa	2.58	3.64	0.3	6.52
	Jacqueline	2.6	3.15	1.5	7.25
	JDL	1.33	1.57	0.6	3.5

<b>Non-NBCTLs Mean Totals</b>	<b>1.80</b>	<b>2.56</b>	<b>0.58</b>	<b>4.94</b>
-------------------------------	-------------	-------------	-------------	-------------

Table 3. Observational Scores for the Participants Across the Three Stages

These scores reveal little difference with the inclusion of SRL strategies in teaching across the two groups; the scores are quite similar within the three stages. Similarities were also found in their teaching of SRL strategies. At the same time, however, differences in the knowledge and explanation of using such strategies were detected in the interview data. The remainder of the discussion surrounding the findings will address these themes organized by similarities and differences and supported by the interview and observation data.

## **Similarities**

### ***Visualization Similarities***

Both groups discussed the visual representation of concepts, such as graphic organizers, outlines, or teacher provided prompts to imagine or visualize an idea. In interviews, many mentioned offering graphic organizers to students, linking to the idea that seeing material presented visually was helpful for learners. For example, non-NBCTL Sydney said in reference to setting up goals for a learning event:

...ways to do goal setting so that you can present it to them and that they can choose a way to do it, you know. Often, graphics, some kind of graphic organizer is what we tend to lean towards because kids are visual.

From classroom observations, the researchers observed little implementation of the strategies described by the teacher librarians. Four of the librarians in the study either made mention of using visual strategies to guide learning or offered a teacher-designed frame to help students sort information. Two of these were NBCTLs and two were not. They offered encouragement to their students to either use the tool, Incognito and Violet, or verbally encouraged their students to try to imagine/envision the information being presented, JDL and Sydney. None of the teachers during the observed classes offered students the opportunity to develop or consider their individual learning processes and what might best serve those for the learning activity, which would have elicited a higher observation score.

### ***Chunking Similarities***

Across groups, TLs used similar language and named like strategies when discussing dividing tasks to prepare for learning. Some of these included "chunking," "breaking things down into steps," "checklists," and "calendars." They suggested using checklists and calendars as tools for helping students break tasks into manageable "chunks" or "steps." For example, NBCTL Naomi describes beginning the process with students as young as five years-old:

even my kindergartners, I start with *Froggy Gets Dressed*, that little book, and tell them about you know, Froggy didn't get to play in the snow because he didn't have a process for getting dressed so he just sat there starting over all the time, and um, that's where you need a process because if you want to get something done, you're going to have to have the steps to be able to do it.

Non-NBCTL Jacqueline described this same idea with reference to calendars and helping students to develop and maintain schedules for completing tasks. All five of the NBCTLs referenced "chunking" or "steps" in some way as did four of the non-NBCTLs, Tessa, Jacqueline, Sydney, and Owl.

Upon observation, however, there was scant evidence of this type of skills coaching across both groups. NBCTL Eleanor made a verbal reference to breaking down the tasks for the class period, what students will accomplish, and the timeframe for doing so. One of the observed lessons non-NBCTL Tessa taught introduced a new research project where students used index cards to organize their notes; the handout of instructions for this project did include a marking rubric with deadlines. However, no other teachers referenced or used a calendar, rubric, or checklist for breaking down either a long-term project or the class period itself.

### ***Modeling Similarities***

Both the NBCTLs and non-NBCTLs stressed the importance of modeling and scaffolding student learning in their interviews. Non-NBCTL Sydney noted in her primary school library "modeling thinking is very important." The NBCTLs frequently mentioned sharing their own personal ways of learning with their students to help give them a model to practice. NBCTL Violet was clear in her view of this as she said, the "other thing we do a lot of is modeling that, that um, as librarians we're also, we're teachers, but we're also learners." NBCTL Eleanor, who was teaching a middle school class researching a famous person of their choice, noted that the kids "haven't lived long enough to have a really good schema on any of these topics" so "you show them what you want the product for each step to look like...and by doing it that way you scaffold them, you know, to build them up to succeed."

This modeling and scaffolding was quite evident in the observations from both groups. Many of these class sessions were dealing with the research process and using resources within the library collection like print books and online databases to find information. Non-NBCTL Owl modeled her search processes for her secondary students as did non-NBCTL Tessa and NBCTLs Naomi, Eleanor and Incognito. Naomi did a demonstration of an online search using her library's catalog for her grade five students. The students were then encouraged to use the catalog themselves to find resources interesting them. Tessa's lesson was heavy on research and included students critically analyzing the value of their sources. She engaged them in a discussion about Wikipedia as a source stating, "Let's talk about Wikipedia for a moment, I know it is not to be a resource, but I also know you will use it." She went on to admit using Wikipedia herself and described the ways she uses it, verbally modeling her own research processes.

### ***Reflection Similarities***

In the interviews, all participants stressed the importance of reflecting on the process of learning in broad and detailed terms. Reflection activities mentioned by both groups included exit tickets, peer evaluation exercises, and self-questioning techniques. NBCTL Violet stated it is important to be:

...encouraging kids to be reflective about what they're doing. So, not just doing it, again, but understanding why you're doing it and what's working and what's not

working so then they can start to think about, okay, what do I need to do better or differently next time and really getting them to think about the whys.

As shown in Table 3 reporting the observation scores of each of the ten participants, the scores for the reflection phase were the lowest scores across the three phases and across the two groups. The NBCTLs scored just slightly higher than the non-NBCTLs. NBCTL Eleanor and non-NBCTL Sydney included “exit tickets” for their students to complete before leaving the library. However, Sydney’s activity was more content-driven instead of process-driven, and process is what the observation protocol sought. Non-NBCTL JDL and NBCTL Violet included verbal prompts for their students to reflect on the “why” of how and what they learned during the research lesson. These were the only instances of reflection observed during the lessons.

There was also a clear pattern of challenges in regards to the interviews about the reflection phase. Both groups noted time constraints and the testing culture as impacting their ability to incorporate reflection activities. NBCTL Ruby reflected “it’s the [standards], maybe we’re so test driven now that kids can’t sit around a table and come up with a solution to a problem.” NBCTL Eleanor voiced a similar statement when she noted being “so crunched with the demands of the curriculum that [she] struggle[s] to get [teachers] to do the lengthy things we used to do for research.” Despite the time and curricular challenges in implementing reflection into the final stage of a learning event, Naomi eloquently notes that:

...really that last step is the one that gets shoved off sometimes because we just want to be done with the stinking thing, but it’s one of the most important to get the kids to do, is really to get them to reflect on what they’ve done because otherwise it’s just kinda um, repeating the same mistakes and um, you know you’re not getting experience your just doing a bunch of stuff.

## **Differences**

### ***Visualization Differences***

Despite the similarities reported, a pattern of difference emerged from the theme of visualization. While NBCTLs and non-NBCTLs discussed many of the same strategies for making ideas more visual for students, including graphic organizers, imagery, and outlines, the information presented by the NBCTLs was more detailed and context embedded (i.e., provided an example of strategy use in an example from classroom practice.) A comparison of two responses helps illustrate this distinction. NBCTL Incognito shared her perspective on strategies to help learners set goals for an assignment saying:

so like for me, two column notes are magic, but you might hate that, it may not work for you at all. So you need a different trick and maybe your trick is making a movie in your head about everything you read, about everything that is being lectured, or draw a little picture every time there is a key concept in the lecture, drawing a little picture in your notebook so finding those tips and tricks or maybe you have to talk it out, underlining it and when you get home you just talk it out. Whatever works for you, teach your brain that, this is my tip, this is my trick, this is what works, this is what makes me successful, tada!



While non-NBCTL JDL also lists some of the same ideas, he provides little elaboration of direct application, stating, "...making outlines and lists and using note cards for research, others might use the technology, there are organizers."

As discussed previously, four of the observed TLs included references to worksheets for visually representing ideas from the lesson: JDL and Sydney, non-NBCTLs and Incognito and Violet, NBCTLs. Both of the NBCTLs had handouts for the students to use. Incognito's was a step-by-step guide for working through a science inquiry lesson requiring book and Internet research. The sheet involved complex thinking tasks and a graphic to guide students' analysis of various minerals. Violet also guided students through an Internet research activity; hers was to help students evaluate websites. The sheet she provided them was a graphic organizer based around the acronym CARRDSS, each letter representing a step in the website evaluation process. Students' evaluated websites in collaborative groups, using the organizer as a tool. These four examples illustrate a striking contrast between the two groups of TLs. The NBCTLs had materials prepared for their students to use that visually organized information for them. Two non-NBCTLs depended solely on verbal prompts to do so.

### ***Chunking Differences***

Two distinct differences emerged from the data regarding "chunking" of tasks. As noted above, in practice, TLs did little to support this skill. However, from interviews, the NBCTLs once again provided greater context and a stronger narrative for describing how to implement these tools than did the non-NBCTLs. NBCTL Ruby used an example to describe how she might herself go about using time/calendar as a guide for accomplishing a learning task:

...set time goals for yourself. In two weeks, I want to know um, everything about ancient art, I want to be able to identify all the pieces of ancient art, or pictures that are going to be on that, or I want to um, be able to recognize all the vocabulary for this unit and then move into the next step and the next step and you have to be so methodical about it in order for them to grasp so much knowledge.

She both references time and breaking the task into steps in the example she sketches. In contrast, non-NBCTL Tessa describes breaking a unit into steps for students, but speaks in more general terms:

Monitoring is a matter of steps. Any good teacher is going to create a unit with lots of little baby steps and again this depends on the age because we deal with, at my school, with such a wide range of learners um, and they, ages and grades, it really varies heavily from the youngest to the oldest, but you're gonna structure the unit in small steps.

Tessa's example leads into the second notable difference between NBCTLs and non-NBCTLs discussion of "chunking." The NBCTLs placed a greater emphasis on student independence and autonomy; the goal of teaching or modeling the skill of chunking was to have students be able to carry out that task themselves. Whereas the non-NBCTLs spoke of "chunking" more in terms of what they do to structure a lesson, as did Tessa in the quote above.

### ***Modeling Differences***

As noted in the previous themes, the major difference between these two groups in the area of modeling was again the NBCTLs discussion of the ways that they model and scaffold for students. There were nineteen instances where statements from the NBCTLs' interviews were coded into this pattern with only seven instances from the non-NBCTLs' interviews. Further, in the interviews, the NBCTLs discussed more descriptively that modeling and scaffolding were essential to their teaching; they considered it part of the lesson. However, some of the non-NBCTLs voiced more surprise at the level of scaffolding and modeling their students needed. In working with secondary students, non-NBCTL Owl noted "I really was amazed at the amount of coaching and scaffolding that I felt was necessary to make projects successful."

### ***Reflection Differences***

Prior analysis of reflection similarities detailed here showed little difference between the teaching observation scores with the two groups in regards to reflection. However, there were clearer differences in the interviews about reflection. The NBCTLs gave a stronger discussion in how to implement reflective activities into their teaching, offering specific details and more succinct responses than the non-NBCTLs. They gave examples of the types of questions they would enlist students to ask themselves post-learning in order to pinpoint their strengths and weaknesses as researchers. NBCTL Violet described this process of self-questioning using a journey metaphor:

So we're trying to build, I'm trying to build in constantly space for kids to reflect on either how something can help them in a different situation or how can they improve whatever it is they've done so that the next time they encounter it, they sorta know how to know what the new road map is.

### ***Limitations***

Limitations that must be noted from this study are related to the participants and their different characteristics as well as the schools they teach. There was a wide range of experience in teaching and teaching in the school library, but it is clear that the NBCTLs have more school library and teaching experience, respectively, (96/115 years) than the non-NBCTLs (73/100 years). Further, the researchers note that we only observed two teaching lessons and that the both groups of TLs may incorporate more SRL strategies into other lessons. The age range of learners is another factor. It would be assumed that secondary students should naturally have more autonomy and knowledge of their learning processes than primary students.

Another factor that we note that was evident in our discussion in the findings as well is the difference in the interviews of the NBCTLs and non-NBCTLs. In many cases, the NBCTLs were better able to express and reflect on their teaching and learning practices. The process for earning NBC is very rigorous and includes multiple elements of just this: reflecting and analyzing one's teaching. Thus, the NBCTLs would have much practice and experience in answering questions like those in our interview protocol. Using the observations helps to negate this limitation, but it was still present as we analyzed the interview data.

## Significance

Research regarding differences between NBCTs in the US and those without the certification includes mixed results. Researchers reported that NBCT before engaging in the process of certification tend to be reflective practitioners and carry a belief system of encouraging critical thinking (Johnson, 2009; Unrath, 2007). Our study found similar results in that while the NBCTLs in our sample more richly described reflective practice, they did not engage their students more actively in it than did the non-NBCTLs. NBCTLs provided a richer, more complex context and extensive answers to interview questions across emic codes than did the non-NBCTLs, yet classroom practice looked largely the same. This finding correlates to the work of Stronge et al. (2007) who found that in interviews with NBCTs, their description of strategy was superior to non-NBCTs, but classroom practice was generally equivalent.

Sparse research has paired examining SRL knowledge - as described by teachers - with classroom practice. However, much evidence indicates that the skills can be taught (Azevado & Cromley, 2004; Perry, VandeKamp, Mercer, & Nordby, 2002). Key factors for students to learn these skills include direct teacher instruction, guided practice, and instructor feedback (Butler, Karpicke, & Roediger, 2008; Bol, Hacker, Walck, & Nunnery, 2012; van den Boom, Paas, & van Merriënboer, 2007). While our study did not examine student achievement or SRL skills acquisition specifically, these findings tie to comments made by some of the study participants.

Participants from both groups explained the major obstacle for teaching SRL skills is finding time to do so in the school day. Time for direct instruction, guided practice, and meaningful feedback of SRL skills has to compete with instruction on content area learning as measured by high-stakes standardized tests. Even though many of our participants knew of and understood how to teach SRL skills, NBCTL and non- NBCTL alike, results from this study suggest SRL skills instruction is losing the race. However, teachers from our study clearly value these skills and the Common Core Standards adopted by most states in the US place the emphasis back on skills instruction. Perhaps, this will help boost SRL skills back into the winners' circle.

## References

- Australian Institute for Teaching and School Leadership. (2014). *Certification of Highly Accomplished and Lead Teachers*. Retrieved from, <http://www.aitsl.edu.au/certification/about-certification/certification-of-highly-accomplished-and-lead-teachers>.
- Azevado, R., Moos, D., Greene, J., Winters, F., Cromley, J. (3008). Why is externally-facilitated learning more effective than self-regulated learning with hypermedia? *Education Tech Research Development*, 56, 45-72.
- Bol, L., Hacker, D., Walck, C., & Nunnery, J. (2012). The effects of individual or group guidelines on the calibration accuracy and achievement of high school biology students. *Contemporary Educational Psychology*.DOI: <http://dx.doi.org/10.1016/j.cedpsych.2012.02.004>

- Butler, A. C., Karpicke, J.D., & Roediger, H. L. (2008). Correcting metacognitive error: Feedback increases retention of low-confidence correct responses. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 34, 918-928.
- Garrison, K.L., & Spruce, R.S. (2013). "Asking questions," "chunking," & "sharing the progress": How school librarians apply metacognitive strategies in their teaching. American Educational Research Association Annual Conference, San Francisco, CA, USA.
- Johnson, T.S. (2009). Performing "teacher": A case study of a National Board Certified teacher. *English Education*, 41(2), 158-176.
- National Board of Professional Teaching Standards. (2013). *The Five Core Propositions*. Retrieved from, <http://www.nbpts.org/five-core-propositions>.
- Perry, N., VandeKamp, K., Merer, L., Nordby, C. (2002). Investigating teacher-student interactions that foster self-regulated learning. *Educational Psychologist*, 37, 5-15.
- Patton, M.Q. (2002). *Qualitative research and evaluation methods*. (3rd ed.). Thousand Oaks, CA: Sage.
- Phillips, A. (2008). A comparison of National Board Certified Teachers with non-National Board Certified teachers on student competency in high school physical education. *The Physical Educator*, 114-121.
- Rouse, W. (2008). National Board Certified Teachers are making a difference in student achievement: Myth or fact?. *Leadership and Policy in Schools*, 7, 64-86.
- Scheetz, N. & Martin, D. (2006). Teacher quality: A comparison of National Board-Certified and non-Board-Certified teachers of deaf students. *American Annals of the Deaf*, 151 (1), 71-87.
- Schraw, G. (1998). Promoting general metacognitive awareness. *Instructional Science*, 26, 113-125.
- Spruce, R. S. (2012). *Teacher beliefs, knowledge, and practice of metacognition and self-regulated learning* (Unpublished doctoral dissertation). Old Dominion University. Norfolk, VA, USA.
- Stronge, J., Ward, T., Tucker, P., Hindman, J., McColsky, W., & Howard, B. (2007). National Board Certified Teachers: Is there a difference in teacher effectiveness and student achievement? *Journal of Personnel Evaluation in Education*, 20 (3-4), 185-210.
- Unrath, K. (2007). The impact of the reflective portfolio on National Board Certified art teachers. *Visual Arts Research*, 33(1), 100-109.

- Uther, J., & Pickworth, M. (2014). TLs as leaders: Are you a highly accomplished teacher librarian? *Access*, 28(1), 20-25.
- van den Boom, G., Paas, F., van Merriënboer, J. (2007). Effects of elicited reflections combined with tutor or peer feedback on self-regulated learning and learning outcomes. *Learning and Instruction*, 17, 532-548.
- Vandevoort, L., Amrein-Beardsley, & A., Berliner, D. (2004). National Board Certified Teachers and their students' achievement. *Education Policy and Analysis Archives*, 12(46).
- Zimmerman, B. J. (2008). Investigating self-regulation and motivation: Historical background, methodological developments, and future prospects. *American Educational Research Journal*, 45(1), 166-183.

### **Biographical Notes**

Kasey Garrison is a lecturer with the Teacher Librarianship Team in the School of Information Studies at Charles Sturt University's Wagga Wagga campus in New South Wales, Australia. Kasey's primary research areas are focused on diversity within children's and young adult literature and reader responses to such titles. She earned a PhD in Education from Old Dominion University in August 2012. Her dissertation, entitled "'This intense desire to know the world:' Factors Influencing the Collection Development of Multicultural Children's Literature," was a mixed methods study focused on diversity within library collections and their surrounding communities.

Robin Spruce is a lecturer at the School of Education and Leadership Studies and in the College of Arts and Sciences at the University of San Diego, in the state of California, United States. Her research interests include teacher and student self-regulated learning as well as sense of community in on-line learning environments. Robin earned a PhD in Education from Old Dominion University in August 2012. Using mixed methods in her dissertation, "Teacher knowledge and practice of self-regulated learning and metacognition" she examined teacher knowledge and practice of self-regulated learning in relationship to their classroom actions.

## **Appendix A.**

### *Interview Protocol*

#### **Planning:**

1. How might you use goal setting in your own learning?
2. How would you encourage your students to use goal setting when planning for a learning task?
3. How would you plan before beginning a learning task?
4. How would you encourage students to plan for a learning task?
5. How would you enhance students' self-motivational beliefs to improve student learning?
  - Probe: Self-Efficacy
  - Probe: Outcome expectations
  - Probe: Task interest
  - Probe: Goal orientation

#### **Monitoring:**

6. In what ways would you monitor or control your own learning (assert self-control)?
  - Probe: Using self-instruction?
  - Probe: Using imagery?
  - Probe: Using attention focusing?
  - Probe: Using specific task strategies?
7. What techniques might you employ to encourage self-control (self-instruction, imagery, attention focusing, specific task strategies) of learning for your students?
8. What are some methods you might employ to monitor your learning process, metacognition, while engaged in a learning task?
9. How would you encourage or implement monitoring of the learning process, metacognition, in your teaching?
10. What are some techniques you might use to track your progress through a learning task?
11. How would you encourage students to track their progress through a learning task?

#### **Evaluation:**

12. How might you evaluate your learning after completing a learning task?
  - Probe: Self-evaluation
  - Probe: Causal attribution
13. What are some activities you might design to encourage student reflection and evaluation after a learning task?

14. How might you determine your satisfaction with a learning outcome after you complete a learning task?

15. How would you encourage students to evaluate their satisfaction with the outcome of a learning task?

16. How would you describe self-regulated learning to your students?

**Appendix B. Observation Protocol**  
*SRL Classroom Observation Instrument*

**Pseudonym:** \_\_\_\_\_

*R = Teacher reference to*

*DA= Teacher provided opportunities to practice/perform/discuss (directed activity)*

<b>Observable Behaviors</b>					
<b>Planning</b> reference to/directed activity for:	0 Not observed	1 Limited application R	2 Somewhat limited application R (once)	3 Somewhat strong application DA	4 Strong application DA (more than once)
1. setting task goals					
2. seeking information and strategies needed					
3. setting time and resource allotment					
4. self-instruction					
5. attention focusing					
6. self-recording (e.g. maintenance of a record of progress)					
<b>Monitoring</b> reference to/directed activity for:	0	1	2	3	4
7. clarifying understanding of task/content					
8. evaluation of progress towards goals					
9. self-instruction					

<b>Observable Behaviors</b>					
<b>Planning</b> reference to/directed activity for:	0 Not observed	1 Limited application R	2 Somewhat limited application R (once)	3 Somewhat strong application DA	4 Strong application DA (more than once)
10. attention focusing					
11. self-recording					
12. use of specific task strategies					
13. assessment of task-understanding					
<b>Evaluating</b> reference to/directed activity for:	0 Not observed	1 Limited application R	2 Somewhat limited application R (once)	3 Somewhat strong application DA	4 Strong application DA (more than once)
14. progress towards task goals					
15. strategy use - those that succeeded and failed					
16. actions to be repeated or modified for subsequent related tasks (adaption based on performance)					
17. determining self- satisfaction (based on performance)					
18. causal attribution					

Comments:

---



---



---



---