WHAT TEACHER CANDIDATES NEED TO KNOW ABOUT ACADEMIC LEARNING TIME

Rita Mulholland
and
Michelle Cepello
California State University

A model assignment was designed and tested to enhance special education teacher candidates' skills and understandingin order to improve student learning. The model includes university and school-site activities that develop teacher candidates' awareness of the relationship between on-task learning time and student achievement. Teacher candidates (N=90) systematically gathered data on their own teaching behaviors and the learning behaviors of their students to measure the level of engaged teaching and learning. The process of guiding teacher candidates through the gathering, graphing, and analysis of student data is presented. Findings, as documented by candidates' responses to the data, indicate the proposed assignment was successful in developing candidates' understanding of the relationship between student achievement and on-task learning.

Academic learning time (ALT) has been viewed by educational researchers and legislators as a critical element in the academic achievement of American students. Although states began increasing the number of days that schools served students, subsequent research began to show little or no relationship between the increase of time a student spent in school and student achievement (Cotton & Wikelund, 1990; Walberg & Fredrick, 1993). The case for lengthening the school day as a means of improving academic achievement was further eroded by the exorbitant cost of maintaining an expanded school year. It is not surprising that researchers and legislators determined that the costs of lengthening the school day did not justify the small achievement gains made by our nation's students (Levin, 1984; Hossler, Stage & Gallagher, 1988). In a 1991 briefing report presented to the National Association for Year-Round Education (Copple, Yane, Levin & Cohen, 1992), it was estimated that lengthening the school year would cost states between $2.3 and $121.4 million for each additional day of instruction. A year later, it was reported that it would cost the nation between $34.4 and 41.9 billion annually to expand the traditional school year (Picus, 1993).

Given the budget concerns, educational researchers began to focus on the relationship of allocated time and learning. In response to public outcry for increased academic achievement, the 1994 National Commission on Time and Learning was formed to specifically examine the amount of time students were actively engaged in learning. The Commission's subsequent report, *Prisoners of Time* (Kane, 1994), chronicled how American students were wasting most of their school day engaged in non-academic activities and strongly recommended that the American classroom experience be redesigned to include a minimum of 5.5 hours of core subject matter instruction (Kane, 1994).

This disconnect between allocated time and learning was further amplified when research showed that a vast portion of subject matter instruction was typically eroded by factors such as inefficient classroom management, time spent in maintaining discipline, ineffective

instructional techniques and inappropriate curriculum and that only 38 % of a typical school day was allocated to engaged learning (Aronson, Zimmerman, & Carlos, 1999).

In light of both the expense of extending academic calendars and the weak relationship between allocated time and improved academic achievement, schools began to focus on maximizing student learning and increasing effective teaching methods (Metzker, 2003). Researchers began to see educational time as a vertical continuum, with the number of hours in a school year at the top of the continuum. At the bottom of the time continuum, the most difficult to measure along with the most challenging for legislatures to influence, were those instances when students successfully learned core content (Aronson et al, 1999). This level of time is defined as Academic Learning Time (ALT). A high level of ALT exists when: 1) students are covering important (tested/evaluated) content; 2) students are *on-task* most of the class period; and 3) students are successful in most of the assignments they complete (Carroll, 1963).

CSU's Chico Special Education Intern Program instructors have been exploring meaningful methods of incorporating course assignments that address candidates' accountability for student achievement**.** In an era of increased teacher accountability for effective use of instructional time, and federal mandates for institutions of higher education to prepare highly qualified teacher candidates, our faculty are embedding curriculum and instruction courses with assignments that provide teacher candidates with tangible strategies for measuring their proficiency in establishing high levels of academic learning for their students. In order to address the specific curricular needs of the participants, the instructors met with the interns and their administrators at their school sites and obtained information regarding the specific regional needs of the intern.

Participants
The participants were 90 special education intern teachers in curriculum and instruction classes, were employed as special education teachers at both the elementary and secondary levels, but were not credentialed in special education. These interns who ranged in age from late twenties to early fifties, typically had no teaching experience at all, with less than 10 individuals having taught as general education teachers. The interns were enrolled in California State University Chico's special education alternative certification program which is sponsored by the U.S. Department of Education, Office of Special Education Programs (OSEP) Personnel Preparation grant. Upon acceptance into the alternative certification program, participants were issued internship credentials, which allowed them to teach in special education classrooms while completing required coursework for their clear Special Education Credential. Grant funding provided critically needed stipend incentives to assist the interns in overcoming major obstacles to obtaining special education teaching credentials. Many participants lived in remote and isolated rural regions of Northern California and were often the only special educators teaching in their district. In order to provide the support necessary to alleviate the region's serious and persistent shortage of fully credentialed teachers of students with special needs, district and university staffs cooperated to provide joint support, local mentoring, and supervision throughout the interns' preparation period.

Two instructors in this study, both of whom have doctoral degrees with credentials in special education, have over twenty years of experience teaching students with special needs from preschool to secondary levels, as well as over 7 years experience each teaching special education teacher candidates.

Materials
In addition to research articles, the instructors provided a checklist (Appendix A), adapted from the Beginning Teacher Evaluation Study (Scandoval, 1976), for the teachers to use when analyzing their tapes and documenting specific teacher, class and targeted student behaviors. The teachers used their own video cameras and tapes.

Method

Because interns assume the responsibility of a classroom teacher without the benefit of prior teaching experience or pedagogy in the field of special education, the need for relevant and meaningful course content was considered by the instructors to be especially critical to the academic progress of the interns' students. To guide the special education teacher candidates in understanding the link between the time students are engaged with content and their academic achievement, the instructors presented several studies (Kane (1994), Prator (1992), Metzker (2003), & Black (2002)) on Academic Learning Time as an assignment in the curriculum and instruction classes. The instructors provided the teacher candidates with the articles four weeks before the class sessions to familiarize them with this research. Since the classes for the teacher candidates were whole day classes, several class hours were devoted to the discussion of ALT in the first class and several hours in a follow-up class after completion of the assignment.

Following a discussion of these studies, the teacher candidates shared variables they felt may have interfered with their own students' academic learning time. These variables included the time teacher candidates spent dealing with inappropriate behaviors, classroom intrusions, and a broad range of students' needs.

As a follow-up to this discussion, instructors presented the teacher candidates with the process for monitoring their own teaching behaviors, whole class activities, and the activities of one student who was not academically successful. The teacher candidates were provided with a checklist that explained pertinent terms needed to document their findings (Appendix A).The instructors explained each of the terms and discussed how these behaviors presented themselves in their classrooms. Before leaving class, they were given the opportunity to practice documenting behaviors and creating charts by observing some role-play by both the instructors and their colleagues. They were also guided through an in-depth discussion regarding teacher behaviors that promote and interfere with students' engagement in learning.

Over the course of the following weeks, the teacher candidates made several videotapes. They selected which subject to tape, so the length of each of their tapes depended on how much time their specific schools allotted for the teaching of that content. For elementary level teachers, the tapes may have been 30 minutes in length, while for secondary teachers, the tapes may have been 45 minutes in length. Teacher candidates were asked to select a taped session that provided them with insights into how they were spending instructional time and their students' responses in their classrooms. After analyzing their videotapes, teacher candidates created charts showing teacher behaviors, class activities, and the behavior of their targeted students. In addition to creating charts, the teacher candidates also provided a written reflection to demonstrate their understanding of the correlation between their behaviors and engaged students' time. This information was then shared with their colleagues during the next class session.

Results

A month later when the next class was held, the teachers transferred the information from their own three charts (instructor behaviors, class activities, and targeted student behaviors) onto three whole class charts to summarize the findings for all to see. The instructors guided the group discussion by having them view these three charts as if they were summary charts of a whole special education program in a school district. The teachers commented then about what recommendations they would provide to a program that showed these engaged and not-engaged behaviors. This whole group discussion was followed by the teacher candidates sharing their specific written reflections and charts with their colleagues in small groups of five.

The following three graphs represent a compilation of the tape submissions of 90 teacher candidates: Teaching Behaviors, Class Activities, and Targeted Students' Behaviors.

Appendix B contains specific comments from the teacher candidates. The first graph represents *Teacher Behaviors*. The codes used by the teacher candidates to document teaching behaviors are as follows:

OP = Organization, Plan
PI = Provide Instruction
PE =Provide further explanations
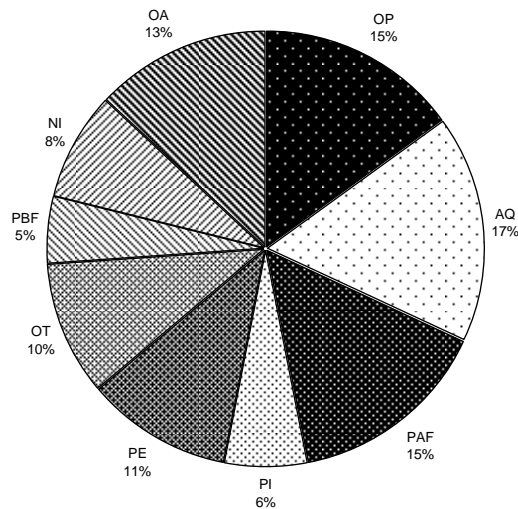OA= Observe Academics (checks work)
AQ = Ask Questions of Students
PAF = Provide Academic Feedback
OT = Observe to see if students are on task
PBF = Provide Behavior Feedback
NI = Not interacting with students

Teacher Behaviors

The instructors began the discussion of the group results by focusing first on the data showing teacher candidates not interacting (NI) with students eight percent of the instructional time. Many teacher candidates acknowledged that this lack of teacher-student interaction would greatly impact the effectiveness of their teaching. When reviewing the data, several teacher candidates reflected that their instruction was often interrupted by classroom demands. These demands included responding to paraprofessionals' questions, answering phone calls, or stepping outside of the classroom to speak with colleagues.

When discussing the results of the data that tracked teacher candidates' monitoring their students' on-task behavior (OT), teacher candidates acknowledged that the 10 percent of their instructional time devoted to this tracking behavior could be turned into more interactive teaching that would contribute to the students' success in the content and reduce the amount of student time on independent work. They also stated that some students' behaviors might decrease if teacher candidates were more actively involved in the learning process.

Following this discussion, the instructors addressed the data regarding teacher candidates' observing the academic work (OA) their students were doing. Teacher candidates were not surprised that the data showed they spent 13 percent of their instructional time in this area. As

teacher candidates though, some shared that many of their students' off-task behaviors might be correlated to their spending too much time with individual students at the expense of the whole group.

In addressing the data on providing further explanation (PE, 11 percent) for students, the teacher candidates agreed that more effective instruction would eliminate many of the questions asked by the students. Guided discussion of the data resulted in the teacher candidates' understanding of how many valuable instructional hours might be wasted on answering questions that could have been avoided through clear and effective instruction.

Much discussion centered on the time teacher candidates spent in creating an organizational plan (OP). Data indicated that 15 percent of their instructional day was spent providing students with the structure for the lesson at the beginning of class. Several teacher candidates reported concerns about students arriving late from other classes or coming in for short periods of assistance, often eroding the positive effects of spending time on establishing the structure of the day. Many teacher candidates felt that these disruptions interfered with their efficient use of instructional time with the rest of the class.

The teacher candidates debated the value of providing behavior feedback (PBF, percent) versus feedback on academic performance (PAF, 15 percent). The instructors emphasized the importance of consistently providing feedback to students regarding how they are academically performing, in addition to general comments about work habits to assist the students' successful academic engagement.

Instructors then directed teacher candidates' attention to the graph indicating time teacher candidates were providing instruction (PI, 6 percent) and involving students in the content through questioning (AQ, 17 percent). Following the overall discussion of these teacher candidates' behaviors, the teacher candidates agreed they needed to adapt some of their teaching behaviors to improve the learning environment for students. The teacher candidates expressed interest in developing lessons that actively engaged and encouraged their students to take responsibility for their own learning. They also concluded that there more probing was needed before students worked independently on a lesson.

This second graph represents *Class Activities*. After analyzing the teaching behaviors, the instructors focused the class on the results showing what was happening with their classes. The codes used by the teacher candidates to document Class Activities are as follows:
FT = Free Time
CB = Class business
NCA = Non-Content Activities
T = Transition
NA = No activity, students finished work
CI = Content instruction

Class Activities

When analyzing their tapes, the teacher candidates reported they are pleased with the results showing the amount of time spent on content (CI, 80 percent). Simultaneously, they would like to decrease the time spent on class business (CB, 2 percent), non-content activities (NCA, 2 percent), free time (FT, 2 percent), and transition (T, 12 percent) to increase the time students are engaged in the content. Instructors shared with these teacher candidates that as they become more experienced in teaching, they should be able to minimize time lost with transitions and non-academic activities.
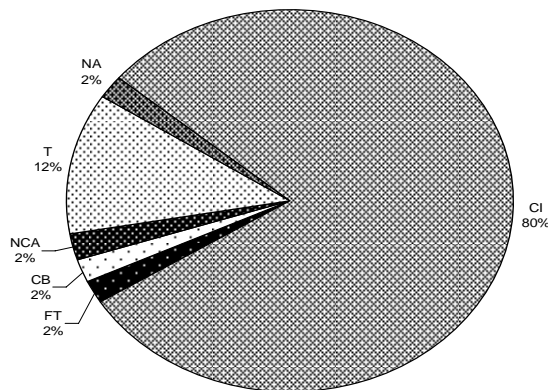
Instructors encouraged discussion as to what teacher candidates should do with students who finish their work and are waiting for further information or for academic feedback (NA, 2 percent). Teacher candidates shared that they need to focus more on varying assignments depending on each student's ability level to keep the students academically challenged. They were aware that behavior problems can arise when students are not academically engaged. In discussing their classes, they pointed out the difficulty of scheduling time to work with each student.

This third graph represents the *Targeted Students' Behaviors*. After analyzing whole class behaviors, the instructors focused the teacher candidates' attention on the targeted students. These students were the ones selected because the teacher candidates were looking for more information on what was interfering with their learning. The codes used by the teacher candidates to document their targeted student's behaviors are as follows:
SQ = Student Questions
SS = Student Speaking
SW = Student Writing
SLE = Student Looks Engaged
SGD = Student Getting Directions
SGR = Student Getting Ready for activity
SNH = Student Needs Help
SOT = Student Off Task

Targeted Students' Behaviors
Teacher candidates commented that after charting their students' behaviors, they were more aware of the many ways a student can be engaged. Teacher candidates expressed dismay about the amount of instructional time lost as a result of a student simply being off task (SOT, percent). Teacher candidates were then encouraged to reflect on the teaching behaviors they were engaged in when the targeted students were off task. Their responses ranged from working with other students, to answering phones, to speaking with teacher candidates or paraprofessionals, and monitoring their classes.
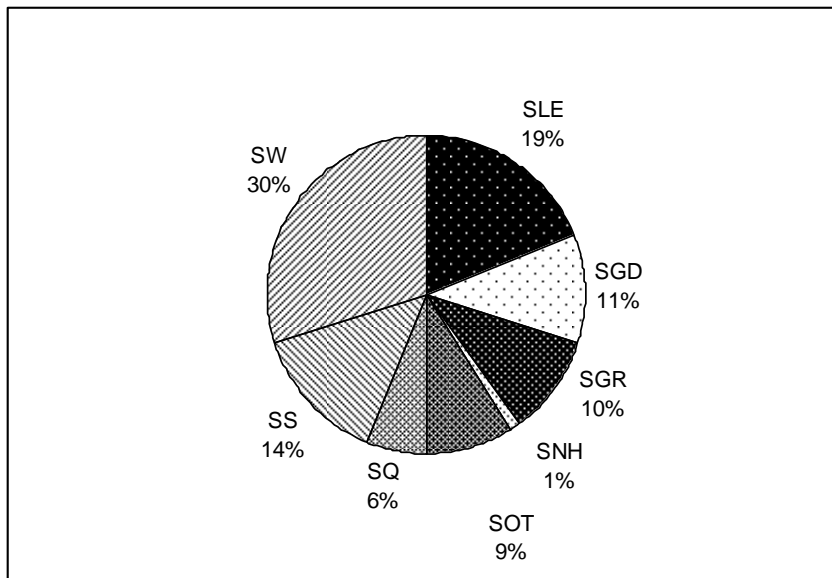
Teacher candidates shared their surprise that one-third of the class time their students spent on independent writing assignments (SW, 30 percent). Again they expressed concern that their students were spending too much time with independent work and would benefit from more teacher-interactive work.

In small group discussions, teacher candidates brainstormed ways to reduce the amount of time some students were spending while getting ready for work (SGR, 10 percent), and the time wasted while students were waiting for assistance (SNH, 1 percent). Most teacher candidates agreed that improving their skills in classroom management and being prepared to meet each of their students' needs would improve their students' engaged time on tasks assigned.

The instructors also encouraged the teacher candidates to share their data regarding students looking engaged (SLE, 19 percent). Teacher candidates commented that the limited work they received from these students can not account for the time spent on the tasks. They expressed a desire to see a balance with direct teaching, giving directions (SGD, 11 percent), responding to questions/comments (SS, 14 percent), and students asking questions (PQ, 6 percent). Teacher candidates further commented that they thought that if they created more engaging interactive activities, students would be spending less time on just receiving directions and possibly more time successfully engaged in the work. Instructors reminded the teacher candidates that they selected these students to monitor because they were not being successful in the classroom. Since other assignments in the course required teacher candidates to develop lesson plans, the instructors suggested that in each lesson plan submitted, the teacher candidates record what they would be doing for these targeted students to keep them engaged. In addition, they would submit grade sheets on several of their students to document how the students were progressing.

Discussion
Teacher training programs are mandated to produce highly qualified teacher candidates who will translate textbook knowledge into learning environments that support their students' academic success. The results of this study suggest the teachers' heightened awareness of the correlation between teacher behaviors and student on task behaviors, which impact

achievement. Although ALT was a specific assignment in the curriculum and instruction courses, the teachers were being guided throughout the program in developing lessons that met the IEP needs of their students in an actively engaged environment, where teachers and students were demonstrating behaviors that support learning.

The findings represent a snapshot of beginning teachers' behaviors, class activities, and targeted student behaviors. Their results are consistent with previous studies documenting behaviors that do not support learning. Overall, teachers saw that they were not spending enough time teaching or interacting with their students, repeating the same assignment explanations to individual students, and not providing feedback. When looking at their whole class charts, their comments indicated they were aware they had not planned well for some students who finished early, had not challenged some students, and saw that they needed better behavior management plans. The teacher's comments regarding their targeted students provided much discussion around the value of using ALT charts to analyze the students' behaviors, planning for learning, and the connection between behavior and students remaining on task.

Since intern teachers enter the university's program throughout the year, there is no sequence of coursework they can follow. Information about ALT is presented in the curriculum and instruction course which means some teachers in this alternative education two-year program take it in their first semester while others might not have the course until the third semester of their program. While these instructors have not measured teachers' on-task behaviors and student growth as an independent factor in these teacher candidates' classrooms, the teachers do provide monthly students' progress reports to show what they are teaching and how their students are performing. This combination of focusing on teacher behaviors and students' on-task behaviors, along with the progress reports provide documentation of how effective the teachers are in relation to supporting their students' academic growth.

Instructors in this university's special education program chose to highlight this connection by suggesting to teacher candidates that they systematically and regularly document their students' work and behaviors, in order to gather the type of feedback that will assist them in developing more effective learning environments. Teacher candidates were encouraged to tape themselves regularly so that they could monitor their students' academic engagement, and create classrooms showing a direct relationship between student achievement and academic learning time.

The ALT information provided by the teacher candidates supports previous studies pointing out the correlation between teachers' behaviors and students' behaviors. This ALT assignment allows for teachers to analyze their classroom learning environment to improve their teaching practices and enhance student performance. Although this study was specifically conducted with special education teachers, this type of learning environment analysis would benefit all teachers in improving their instructional program. Because no research exists in ALT with special education programs, this project may generate interest in exploring this connection through university special education training programs.

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<u>Appendix A</u> : Information/Checklist

Teacher Behaviors
OP   Organization, Plan
PI   Provide Instruction
PE   Provide further explanations
OA   Observe Academics (check work)
AQ   Ask Questions of Students
PAF   Provide academic feedback
OT   Observe to see if students are on task
PBF   Provide behavior feedback
NI   Not interacting with students

Class Activities
FT = Free Time
CB = Class business
NCA = Non-Content Activities
T = Transition
NA = No activity, students finished work
CI = Content instruction

Target Student Behaviors
SQ = Student Questions
SS = Student Speaking
SW = Student Writing
SLE = Student Looks Engaged
SGD = Student Getting Directions
SGR = Student Getting Ready for activity
SNH = Student Needs Help
SOT = Student Off Task

Instructions: While viewing your tape, you may need to write a description of the actual behaviors you are observing and then later, after matching the behaviors with these codes, complete the chart. You then create three separate charts (teacher, whole class, targeted student) using the codes to show the number of times you observed each of these behaviors. After studying your own charts, reflectively respond to what correlations you noticed between your behaviors and those of your students. This information should provide you with insights on the relationship between on-task behaviors and student performance.
Example:

Time	Teacher Behavior	Whole Class Activity	Targeted Student Behavior
9:00	OP	CB	SOT
9:01	PBF	CB	SOT

Appendix B: Teacher Comments

I felt there was too much time where I wasn't actively teaching.

I began to see that every time the phone rang it took one of my aides or me away from direct instruction with small groups of students.

I have many interruptions.

A fair amount of time is spent consulting at the beginning or the end of the class period with the general education teacher.

I was immediately struck by how much of my time was spent in repeating explanations.

Some of my students have become very skilled in looking busy although very little is being accomplished.

I feel that I am more of a facilitator than a teacher.

I wasn't providing any feedback.

There are so many times when I am not interacting with my students

I don't always wait for students' responses to my questions.

Some students finished the task and were up socializing, pulling other students off task.

I need to properly challenge the more gifted students.

I failed to communicate expectations that promote proper use of classroom
time.

I got so involved in an assembly and explanations that I neglected to keep an eye on the behavior of my students.

The ALT graph gave me measurable data that can be used to make changes
in instruction and classroom management for my students.

The ALT graph provided detailed information on a specific student and gave me a way to show their behavior in comparison to the rest of the class as well as what I was doing when the behavior occurred.

I am glad to know about ALT and will add it to my toolbox full of ideas for improving instruction for my students.

My targeted student was off task more than anything else but the positive way to look at it is that he is showing mastery and I do not plan well to challenge him.

I believe the success of my target student was due to a consistent schedule and routine.

I may have been a little more diligent during taping in terms of keeping my student on task because I knew I would be critiquing myself.

I saw that my targeted student remained on task and well-behaved. It seems she has become more motivated! I'd like to clone her.

Student was off-task due to my failure to adequately monitor his behavior.

When he/she was not engaged, he was jumping up and down with
excitement.

Student sharpened his/her pencil and showed off.

Student was skilled in looking busy.

I did not circulate to his/her desk as often as others

Student was off task and socializing.

Student seemed to daydream a lot.

Student took a lot of time getting started with his work.