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Changes in preservice teacher dispositions during a teacher preparation program

Kyle LaPaglia[1], Judy R. Wilkerson[2]
[1]Department of Education and Liberal Arts, University of Arizona Global Campus, Chandler, United States
[2]College of Education, Florida Gulf Coast University, Fort Myers, United States

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ABSTRACT

Although substantial attention is being paid nationally to the assessment of pre-service teacher dispositions, largely to meet accreditation requirements, little is known about the extent to which standards-based dispositions change during a preparation program. A systematic approach to tracking change, or the lack thereof, using valid and reliable instruments of varying item types, can help faculty determine if candidates' dispositions are positive and improving at the individual student and group levels. Pre-existing affective and cognitive data for six cases were analyzed for evidence of consistency with the 10 interstate teacher assessment and support consortium or InTASC standards. Dispositions improved as the cases progressed through their programs.

Corresponding Author:

Kyle LaPaglia
Department of Education and Liberal Arts, University of Arizona Global Campus
San Diego, California, United States
Email: Kyle.LaPaglia@faculty.uagc.edu

1. INTRODUCTION

The importance of teacher dispositions has been recognized for four decades [1]. When an administrator hires a teacher with the correct dispositions, students learn and develop; parents are pleased; and district administrators are able to focus on the business of education [2]. Not surprisingly, faculty members of teacher education programs across the United States (US) have increased their efforts in strengthening dispositions in pre-service teachers [1], [3]–[6].

To meet US accreditation requirements from the Council for Accreditation of Educator Preparation (CAEP), educator preparation programs must assess preservice teacher dispositions [7]–[10]. Faculty tend to struggle with utilizing effective affective assessments [11]–[13], and there are few studies that focus on the change in dispositions from the entrance into a program through the final internship [14]. Assessing these changes is not only important to assure high quality teachers but also to provide data for program improvement. Both quality assurance and quality improvement are crucially important in accreditation [15].

Dispositions that guide a teacher's actions in and out of the classroom impact teachers substantially and range from educating students to attending meetings promptly [16], [17]. It is important for teacher preparation program faculty to understand the dispositional development of preservice teachers to identify if they are likely to apply the pedagogy learned during their university studies to their own classroom instruction or if they are not likely to do so because they do not value those skills [11]. Learning if preservice teachers' dispositions change from program entry to final internship can provide a potentially useful predictor of how preservice teachers are likely to act in their practice as well as adjusting programming to meet better the needs of preservice teachers related to dispositions aligned to the professional teaching standards [18].

Teacher preparation program members have discussed how to define and assess dispositions for decades, and, not surprisingly, a variety of assessments aimed at measuring preservice dispositions have been developed [19]. Most of these are single, stand-alone instruments [11], [20], [21]. Stand-alone assessments such as the teacher disposition index (TDI) and the eastern teacher dispositions index (ESTDI) are self-report surveys that provide a "snapshot in time" to record purported dispositions [22]. However, multiple measurement methods, such as those used in the dispositions aligned with teacher standards (DAATS battery) [12] can provide evidence of dispositions over time and with improved reliability [11], [20].

This study centered on the collection and analysis of pre-service teacher dispositional data over time, using both affective and cognitive assessments for the purpose of determining the extent of dispositional change, and illustrating a necessary purpose and use for dispositional measures. While many authors have presented dispositional assessments and the validity and reliability of the measures, the purpose of this study was to determine if the use of such measures could help to determine if standards-based dispositional change had occurred in teacher candidates. Two research questions were established to achieve this purpose: i) How do preservice teacher dispositions, as defined by the interstate teacher assessment and support consortium (InTASC) standards [23], change from preadmission into the teacher education program through final internship? ii) What dispositional changes are identifiable in the different types of cognitive and affective instruments used in this case study?

2. RESEARCH METHOD

The DAATS battery [12] was selected for the affective assessments because items were drawn from the US national standards for teacher assessment [8], aligned with the Bloom and Krathwohl affective taxonomy [24] and had substantial evidence of validity and reliability [13]. The three DAATS instruments used in this study were: i) Beliefs about teaching scale (BATS) a Thurstone agreement scale; ii) Situational reflection assessment (SRA) a thematic apperception test; and iii) Classroom behaviors checklist (CBC) paired positive and negative behaviors. BATS is scored using the Rasch model of item response theory. SRA items are rating using a scale corresponding to the Krathwohl taxonomic levels, with a zero added to the original taxonomy and used for unaware and scores of 1-5 representing the original Krathwohl levels, from 1 for receiving to 5 for characterizing [24], [25]. A total score is not derived for CBC; each behavior is scored as typically positive, mixed, or typically negative. Cognitive assessments were designated as "critical tasks" because of their crucial importance in assuring the performance capabilities of teacher candidates [12]. The nine critical tasks (CTs) included classroom management plan, assessments/testing, lesson plans and adaptations, English learner adaptations, and others.

The collective or multiple case study methodology [26] was used in this study, and six participants (four majors and two minors) were carefully selected from the pool of 134 students measured, based on low scores and program continuation to aid in understanding the research questions and issues [14]. Their pre-admission low scores were viewed as having potential to improve. Consistent with case study research, measures were taken at different points in time and of different types. Data were analyzed separately by instrument. Cross-examination of each case was used to make comparisons so that data could converge to assess the strength of the case, thereby boosting construct validity [26]–[30]. Items from BATS indicating beliefs inconsistent with the InTASC standards were identified, counted, and compared with SRA responses, CBC observations, and critical tasks, looking for evidence of dispositional change while providing for substantial triangulation. Results were tabulated with conclusions drawn about improvements for each case.

3. RESULTS AND DISCUSSION

The results were analyzed and presented for each of the InTASC standards, each of the instruments, and each of the cases separately. All cases showed improvement, but these results are too specific to be of general interest in terms of replicability. As a result, they are not reported in detail herein.

3.1. Results related to the InTASC standards

Table 1 presents the case name (changed for confidentiality purposes), number, and percent of consistent responses, Rasch measure, and Krathwohl taxonomic level. Note that at entry, all six candidates were at the responding or valuing level in the Krathwohl taxonomy as applied to the InTASC standards, indicating that they had positive beliefs about children and teaching. Ann, Jane, and Mary responded the most consistently, indicating a stronger commitment to the dispositions defined in the InTASC standards at entry into the program. Ella was less consistent, and Paul and Amy were at the bottom, indicating weaker levels of commitment. However, the scores for Ella, Paul, and Amy were near the point at which guessing becomes a factor. There is a 50% probability of answering any dichotomous item correctly [11], [13].

Table 1. Preadmission BATSv2 results by case

Case	#Of responses "Consistent" with InTASC*	Consistent responses	Rasch measure	Krathwohl taxonomy level
Ann	34	68%	59.93	Low valuing
Jane	34	68%	59.93	Low valuing
Mary	34	68%	59.93	Low valuing
Ella	31	62%	55.22	High responding
Paul	29	58%	53.01	Responding
Amy	28	56%	51.92	Low responding

*The total number of items on the scale is 50; the range for valuing is 56.3-70.02; the range for responding is 51.72-56.29

Table 2 presents the results for each InTASC standard, classifying the responses by standard as either "weak" or "strong" based on the number of consistent responses per standard for each case. Note that for all six cases, the strongest measured commitment was learner development standard 1 and the weakest measured commitment was planning for instruction standard 7. Each of the cases demonstrated weak commitment in their beliefs with planning for instruction standard 7. Instructional strategies (standard 8) were also a weak dispositional area for the five out of the six cases at entry.

Table 2. Strong and weak InTASC standards for each case

Standard	Amy	Ann	Ella	Jane	Mary	Paul
1. Learner development	S	S	S	S	S	S
2. Learning differences	W		S	S		
3. Learning environments	W		W		S	W
4. Content knowledge				S		W
5. Application of content	S			S	S	S
6. Assessment	W			S		
7. Planning for instruction	W	W	W	W	W	W
8. Instructional strategies	W	W	W	W		W
9. Professional learning and ethical practice	S		S		S	S
10. Leadership and collaboration	W	W	W	W		

Note: 80-100%=Strong (S); 0-50%=Weak (W); 51-79% is neither strong nor weak and is left blank

3.2. Results related to instruments

BATS was administered a second time during the final internship. Teacher education minors do not participate in an internship and were, therefore, not measured. The case name, percent of consistent responses, preadmission, and post Rasch measure, and Krathwohl taxonomic level are depicted in Table 3, demonstrating clear improvement in each case measured but with Amy remaining relatively low.

Table 3. Post internship BATS results by case

Case	Percent of consistent responses	Preadmission Rasch measure	Preadmission Krathwohl taxonomy level	Post Rasch measure	Post Krathwohl taxonomy level
Ann	92%	59.93	Low valuing	75.61	Organizing
Ella	92%	55.22	High responding	73.41	Organizing
Paul	88%	53.01	Responding	73.45	Organizing
Amy	66%	51.92	Low responding	66.49	Valuing

Notes: There were no post scores available for Jane and Mary

The InTASC standards were analyzed individually. Note that there was dispositional growth in all InTASC standards. Growth results were as: i) Learner development standard 1 was the strongest standard for all cases; therefore, there was no growth (but also no regression) discovered in all of the CTs reviewed for all cases; ii) Planning for instruction standard 7 was the weakest standard for all cases on the first administration of BATSv2 (Four cases showed growth, while two did not); iii) Five out of the six cases had an initial weak commitment to InTASC standard 8: instructional strategies, but all five cases demonstrated growth in that standard; iv) InTASC standards 2-8 were identifiable in the CTs, and improvement was noted in all of those standards; however, standards 9 and 10 were not identifiable in any of the CTs. Identification was evident in the SRA with positive beliefs indicated; v) There were positive improvements will all cases, but one case showed improvement that remained one taxonomic level below the other three teacher education majors; vi) CBC provided limited data because of "halo effect." Most cases were evaluated as having typically positive behavior in all elements of the CBC; vii) SRA was only administered to two cases, Ann a major and Jane a minor. Ann's response was notably stronger, as seen in Figure 1.

Because SRA is a Thematic Apperception Test that includes prompts that are, by design, ambiguous, it is the single DAATS assessment used in this study that does not yield to candidates providing the response that they think is wanted. It can be, therefore, the most revealing of the instruments [11], [13], cutting across standards and revealing non-standards-based dispositions like empathy. An example is provided herein with the picture provided in Figure 1.

For this picture the prompt was:
Alone: One of your students asked to go the rest room and found this boy behind a bookcase. The students started to laugh at him, but the boy did not wake up. This has impacted all of the students in the class and interrupted your lesson. What happened to this child and why? Who is this child and what are his needs? What will you do? What will you say to this child, the child who found him, and the rest of the class?

Figure 1. Picture prompt 1 for SRA item "Alone" [12]

Two responses were received and scored:

> "*I would go over and see if the child was okay. I would then try to shake the child and see if the child wakes up. If the child does not, I will contact a school nurse. I would redirect the attention of the students by getting the help of another teacher*." (Jane)

> "*This student might be suffering from sleep deprivation or something else that might trigger that child to be tired, sluggish, and lethargic. This could also draw attention to a larger question of if this student is receiving care at home, possible child neglect. I would confront the student who found the boy and explain to him to not be so quick to judge others and welcome them in no matter what. I would explain to the class that everyone is different, but everyone deserves to be loved and welcomed. I will try to become a haven for this child, and a would hope he feels comfortable enough to communicate with me about this life at home and school. I would not turn a blind eye to this behavior via every aspect. I will try to do my best to further understand the situation*." (Ann)

In this example and all SRA prompts, Jane was rated a "1" for a "receiving" on the Krathwohl taxonomy. Ann's scores were mixed, but her rating for this prompt was a "4," representing "organizing." Despite apparent near equivalent gains for both Ann education major and Jane education minor on all other assessments, the results for SRA were vastly different. Ann's responses here were indicative of a person who plans, organizes, and adapts to new situations while Jane's were much less so.

3.3. Discussion of research question

3.3.1. How do preservice teacher dispositions, as defined by the InTASC standards, change from preadmission into the teacher education program through final internship?

All six cases showed dispositional growth from pre-admissions data through final internship data, based on a combination of affective and cognitive assessment. Specific evidence of change was clearly identified in seven of the InTASC standards in an analysis of critical tasks. There was no evidence of growth in learner development (InTASC standard 1), the highest measured standard, and no evidence of growth in standards 9 and 10, which were not well measured in the critical tasks. No evidence of dispositional deficits related to identified deficiencies was found in the critical tasks for any of the cases or standards. The combination of affective and cognitive measures yielded the data necessary [14].

3.3.2. What dispositional changes are identifiable in the different types of cognitive and affective instruments used in this case study?

Both cognitive and affective instruments were helpful in measuring growth and, therefore, indicate the potential to serve jointly as focal points for teacher education programs [31]. The agreement scale BATS provided useful information on each standard. The projective SRA provided the best information on dispositions that cut across standards, such as empathy, but also yielded specific information on individual standards. The observation CBC was not as useful as it could have been because of the halo effect. Supervisors were unwilling to rate the candidates as anything but "typically positive." Because the focus in many critical tasks was on the student differences and development of each student, Instructional strategies standard 8 was easily identifiable. Professional learning and ethical practice standard 9 and leadership and collaboration standard 10 were not identifiable in the critical tasks; the standards would be more observable over time or in person [14].

4. CONCLUSION

Dispositions are a set of nurtured academic, internal, and social qualities that influence preservice teacher knowledge and skills, which contribute to a professional community of colleagues, students, and families. The key finding in this study is that pre-admission dispositions can be improved as a function of cognitive coursework, but since these improvements should not be assumed, they should be monitored for remediation purposes. Although teacher preparation programs must assess preservice teacher dispositions to meet accreditation requirements, the commitment to systematic assessment and quality improvement based on that assessment is not evident in the literature. This study has demonstrated that preservice teacher dispositions can change over time, based on instruction, and that those changes can be documented through the use of well-developed assessments.

The next logical step is to determine what might happen if improvement was tracked systematically with the intent of using it to improve candidate's dispositions intentionally and fortify instruction and assessment to maximize dispositional focus. While preservice teacher dispositions are important, many faculty members in teacher education programs struggle with utilizing effective affective assessments of dispositions. Disposition assessment and preservice teacher improvement is crucial, yet there needs to be an intentional process for improving dispositions. To those ends, seven recommendations are offered: i) Teacher preparation programs should have a set of disposition assessments that yield valid and reliable results using different measurement methods; ii) Cognitive assessments should embed affective assessment, typically through reflections; iii) Teacher preparation programs should track dispositional improvement through routine and or important assignments and include a planned improvement process to support students with their dispositions; iv) Data on candidates at admissions should be used to track improvement and plan for it; v) Cognitive performance and product assessments, including reflections, should be used intentionally to monitor and achieve dispositional growth; vi) Replication of this study in different geographical regions is needed; and vii) Studies comparing teacher education populations (e.g., minors versus majors and majors in different disciplines) should be conducted.

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BIOGRAPHIES OF AUTHORS

Kyle LaPaglia is an Associate Professor at the University of Arizona Global Campus. He is an Exceptional Student Education Program Specialist in Naples, FL. He has presented research papers on statistical research and literacy at the Annual Meeting of the Eastern Educational Research Association, Clearwater, Florida, and the National Association for Professional Development Schools, Jacksonville, Florida. Dr. LaPaglia's research interests lie in teacher education, education, special education, dispositions, and higher education. He can be contacted at email: Kyle.LaPaglia@faculty.uagc.edu.

Judy R. Wilkerson is a Professor of Measurement, Evaluation, and Research at Florida Gulf Coast University in Ft. Myers, Florida. She has a 40-year long career of teaching, research, and service in assessment and evaluation, with a focus on quality assurance and accreditation. She has consulted widely in these areas both in the U.S.A and internationally, and she has published extensively, including two books, on assessment of teacher competency and dispositions. She can be contacted at email: jwilkers@fgcu.edu.