Pursuing Quality Evidence: Applying Single-Subject Quality Indicators to Non-experimental Qualitative Educational Research

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Abstract: The need for quality evidence in support of strategies used while working with persons with autism and intellectual disability (ID) has been long been recognized by researchers and practitioners. The authors reviewed and applied a number of evidence-based indicators, developed through the “What Works Clearinghouse” (WWC), to the conduct of a retrospective case study of a college instructor’s experiences teaching college students with ID. The indicators were applied with the intent of elevating the potential of qualitative research findings to be replicated in similar contexts by other researchers and practitioners. Findings indicated the potential value of single-case studies aligned with quality evidence indicators as a useful technique to expand the evidence-base of disability-related strategies and practices.

The availability of quality evidence that supports the utility of practices used by educators and parents of students with Autism and intellectual disability (ID) is a matter of increasing importance to practitioners and researchers in Special Education and aligned fields. Numerous authors (Brantlinger, Jimenez, Klingner, Pugach, & Richardson, 2005; Chambless & Hollon, 1998; Cook & Cook, 2011; Cook, Tankersley, & Harjusola-Webb, 2008; Cook, Tankersley, & Landrum, 2009; Drake, Latimer, Jeff, McHugo, & Burns, 2004; Gersten et al., 2005; Kratochwill et al., 2010; Mayton, Wheeler, Menendez, & Zhang, 2010; Mesibov & Shea, 2011; Odom, 2009; Odom et al., 2004, 2005; Thompson, 2006) have worked to identify and define methods and quality indicators to support researchers in the conduct of quality studies that contribute to the evidence-base of instructional strategies and intervention practices. Much of this attention is focused on addressing the “research-to-practice gap” whereby, many research supported practices are underutilized in Special Education and Early Intervention while other practices that research suggests are ineffective, continue to be widely used (Cook & Cook, 2011; Odom, 2009). The effort to address this gap is focused on identifying and promoting the use of “evidence-based practices,” which are instructional or interventional techniques with “meaningful evidence supporting their effectiveness” (Cook & Cook, 2011).

However, another gap, one of consensus, also exists as to what constitutes quality ‘evidence’ and ‘meaningful’ research in the educational constituency of practitioners, researchers, policymakers, funders, and others who may have very different responsibilities, experiences, and perspectives. To visualize this gap, one could consider the diverse needs of both a practitioner serving a specific student in a busy classroom and a reviewer considering numerous voluminous funding applications for the Institute of Education Science. The teacher can no more wait for, and almost certainly cannot conduct randomized control trials of a promising practice, than the IES reviewer could support each proposal that uses less rigorous research methods. These
gaps have motivated the authors to review the relevant literature concerning evidence-based practices and the identification and application of rigorous indicators for qualitative research. This paper reviews the quality indicators identified by the literature to guide rigorous experimental single-subject research, then applies select indicators to a non-experimental retrospective case study involving a single participant (a college instructor working with students with ID) for the purpose of exploring the potential of these indicators to add methodological rigor to descriptive or explanatory qualitative research methods. At the outset, we acknowledge that comprehensive adherence to these indicators, designed as they are for an experimental method, to descriptive or explanatory research is structurally limited by these methods’ lack of purposeful experimental manipulation of study variables. Given this, we ask the reader to consider the potential value of this unorthodox exploration.

Qualitative Research in the Field

Due to the relatively small sample sizes and considerable variation in subject and sample characteristics common to the field of Special Education, many studies utilize qualitative methods of inquiry. Qualitative research has been defined, as a systematic approach to understand the qualities or the essential nature, of a phenomenon or change that has occurred with a particular context (Brantlinger et al., 2005). This approach has generated rigorous scientific-based evidence that can inform policy and practice in Special Education and other fields. In the field of education, qualitative inquiry can be applied to trace and document specific teaching and learning effects, including the nature and extent to which a practice or strategy has a constructive impact which may generalize to other settings or situations of similar context.

A common assumption about qualitative research is that it is merely an inductive process of reasoning (from specific to general), which takes place prior to the establishment of hypotheses or research questions and results in numerous new directions or further study questions to investigate (Merriam, 2009). However, qualitative studies can follow a deductive reasoning process (from general to specific), where questions established about phenomenon based upon past experience or data (baseline) are present (Creswell, 2007). Such practices are commonly used to formulate qualitative research designs within the context of teaching and learning (Merriam, 2009). Researchers with prior direct or indirect experience and knowledge of a problem or situation can anticipate directional hypotheses and design studies that carefully document activity rather than discover phenomena (Brantlinger et al., 2005).

Because variables investigated within qualitative studies are often evolving or emerging, it is necessary for the researcher to view settings and subjects as dynamic and diverse, thus introducing creativity to the process of instrument design or data collection. This might involve using initial interview protocol in a flexible manner so that second level questions can be modified as preliminary evidence emerges (Creswell, 2007). However, flexibility is often viewed as a quality issue affecting the validity and generalizability of potential study findings. This presents the need for researchers to control for assumptions and biases by being explicit about research questions pursued, approaches or methods to be used, variables to be manipulated, and anticipated outcomes.

One qualitative study design, appropriate to Special Education and especially for those conducting research with individuals with ID, is single-subject research methodology (SSR). Single-subject research is intended to be a rigorous, experimental research methodology focused on identifying functional or causal relationships between variables, making it a useful tool to define basic principles of behavior and establish evidence-based education practices (Horner et al., 2005). Given that SSR is intended to be an experimental rather than a descriptive or correlational method, and given the SSR’s systematic replication to enhance external validity, it is generally viewed as a ‘gold standard’ of qualitative research. In fact, a long and productive history exists in which SSR has provided useful information for the field of Special Education (Kennedy, 2005; Odom & Strain, 2002; Wolery & Dunlap, 2001). Since the methodology was first operationalized over 40 years ago (Sidman, 1960),
SSR has proven particularly useful for assessing educational practices at the level of the individual (Horner et al., 2005).

**Rigorous Study Indicators Considered for Use in Case Study**

Addressing the need for evidence-based instructional strategies, the authors present an example of a qualitative research study aligned with quality indicators developed for SSR by the What Works Clearinghouse (WWC) panel of experts on single-case design (SCD) (Kratochwill et al., 2010). The purpose of the WWC panel was to clarify and provide guidance to those reviewing SCD studies, and to assist researchers to prepare studies with an increased level of rigor and improved internal and external validity. Studies could in turn be reviewed and categorized as demonstrating levels of evidence (e.g., strong, moderate, or no evidence).

As quality indicators have been delineated for SSR, the authors have found value in applying them to other qualitative designs, such as the analysis of retrospective case studies. We use quality indicators as proposed by the WWC, to guide the (1) selection and description of participants and context of the setting, (2) selection and measurement of the dependent and independent variables, (3) collection protocol to establish baseline, intervention, and post data, and (4) efforts to control internal validity, external validity, and social validity (Horner et al., 2005). This paper will provide a brief overview of three of the quality indicators, then discuss each of the indicators in the context of conducting a retrospective analysis of case study data concerning the self-reported transformational experiences of a college instructor.

**Indicator #1: Procedures for Sample Identification and Selection**

It is important for researchers to operationally describe study participants, setting, and the process of participant selection (Wolery & Ezell, 1993) to the extent that other researchers can replicate the intervention with similar participants, thus measuring the effects of the intervention in a similar setting. Individual participants and their experiences are considered a unit of analysis enabling each participant to serve as his/her own control. A participant’s status and behavior prior to the intervention delivery is thusly compared to the status or behavior during and/or following the delivery of the intervention (Horner et al., 2005). It is important that the process of selecting participants allows for “typical” subjects to be identified (those with characteristics which would generalize to other similar context) and to emerge in the selection process (Creswell, 2009).

**Indicator #2: Methodology Types: Enhancing Internal Validity and External Validity**

Controls for threats to internal validity allow for confirmation of a functional relationship between manipulation of the independent variable and hypothesized changes in the dependent variable (Horner et al., 2005). When documentation can be provided through case description data, which includes the iterative manipulation of the independent variable (or levels of the independent variable) across observation periods or intervals of time, it is possible to isolate and verify the treatment effect. Traditional case study descriptions or studies with only a baseline followed by insertion of an intervention may provide useful information for the field, but often do not provide adequate experimental control to qualify under the standards for an SSR design (Horner et al., 2005). Thus, when reviewing or preparing a single-case study design it is important to attend to methodological procedures that will impact internal and external validity.

The external validity of SSR findings is enhanced when replication of the effects across different participants, different conditions, and/or different measures of the dependent variable is possible (Horner et al., 2005). SSR typically requires a demonstration of effects with at least three different participants to qualify as a replicable study. The generalizability and/or “boundaries” of an intervention are not established through conduct of a single study, but through systematic replication of effects across multiple studies conducted in multiple locations and across multiple researchers. External validity is established by providing an operational or functional description of the (a) participants under study, (b) context in which the study is conducted,
and (c) factors present prior to presenting the intervening variable (baseline information) (Horner et al., 2005). Reporting specific selection criteria however, assists in defining for whom and under what conditions a given independent variable is likely to result in defined changes in the dependent measures.

**Indicator #3: Procedures for Analysis**

SSR data may be interpreted with the use of statistical analyses (Todman & Dugard, 2001), however, the traditional approach to analysis of SSR data involves systematic visual comparison of responses within and across conditions of a study. Visual analysis involves interpretation of the level, trend, and variability of performance occurring during baseline, under intervention conditions, and during post intervention periods of data collection. An issue to be addressed when using visual analysis methods is that of inter-rater agreement across intervals of data collection. Charts or graphs are utilized as a means to compile and review data using visual analysis methods. Typically four steps are involved in the conduct of visual data analysis, as follows: (1) recording or documenting a predictable pattern of baseline data with sufficient consistency in its level and variability; (2) examining patterns of data to identify trends variability, and consistency; (3) comparing data across phases or intervals; and (4) integrating data to explore relationships or causation (Kratochwill et al., 2010).

**Preparing a Retrospective Single-Case Study Using Quality Indicators**

Applying the above quality indicators, the authors designed a study to understand the changes that occurred within the process of teaching and learning by a faculty member working with students with ID for the first time in an inclusive college setting. To increase the credibility of the findings and implications from the study, the authors applied select indicators for conducting evidence-based research to the study design and implementation. Specifically, the authors strove to extend their conception of the study design beyond the traditional qualitative methods and procedures (Creswell, 2007) and apply Horner et al.’s (2005) quality indicators to a retrospective case analysis of case study interview data.

An advantage of using case study data was that it enabled researchers to gain insight into the dynamics of intervention implementation within the complex, interactive context of the teaching and learning process (Clegg & Bradley, 2006). The evidence-based indicators were applied to the analysis of case study data, which were gathered as part of a model demonstration project operating in a typical urban community college setting. Staff from the model demonstration project collected case data through a series of three interviews aligned with the insertion of an intervention with the participating faculty member over the course of one year as he taught both developmental English and Learning Skills classes.

Our research strategy was to retrospectively review and analyze data (i.e., interactions between instructor who was the primary participant and students with documented IDs who were the secondary participants) gathered by the project staff during a typical academic year. In the selection of a retrospective case study design, our aim was to establish hypotheses, delineate measurable dependent and independent variables, and then through rigorous analysis of interview transcripts, to capture and understand the actual experiences, perceptions, and transformational changes of a teaching faculty member. The purpose of this research was to identify and understand the influences of a specific instructional strategy on the teaching and learning context of a typical faculty member working with students with ID in a typical postsecondary educational setting. The following hypothesis guided the study design and implementation:

A simple instructional strategy (guided notes) introduced to the teaching practice of a typical community college instructor will impact the instructor’s academic expectations of and behavior toward students with ID in the classroom. In turn these changes in the primary participant will impact the expectations and experiences of other instructors in the setting (See Figure 1).

**Establishing the Dependent/Independent Variables**

Following the quality indicators detailed by Horner et al. (2005), the authors describe the
dependent variables with quantifiable and operational precision, as follows:

(1) Verbal Expression of Expectation: Faculty member (participant) indicated concern that students with ID would have difficulty meeting the requirements of the course. His concern was influenced by a statement made by another faculty member who indicated that students with ID would likely fail and should not be included in the course.

(2) Behavioral Expression of Expectation: Faculty member (participant) responded initially to students with ID with a sense of frustration and lack of awareness of their abilities to participate and contribute to the course.

Subsequently, following indicators detailed by Horner et al. (2005), the authors describe the independent variable by recounting how the intervention (guided notes) was introduced to the participant and his subsequent use of the strategy with students in his course.

**Description of Intervention**

The intervention was introduced to the instructor through a professional development activity that was reinforced with handouts and available technical assistance responses to questions and ongoing feedback. The instructor was given a guided notes handout for use in planning and delivering a lesson, which provided a skeletal outline and topic cues through a fill-in-the-blanks format. The instructor in turn, developed and distributed a guided notes handout to his students prior to each class period and instructor-led lecture activity. As the instructor lectured, students followed the guided notes and “filled in” the important lecture points. Conceptually, guided notes allow a student to focus more attention on the instructor by reducing the amount of writing necessary to capture the instructor’s key lecture points. The prompts that guided notes provide can also keep students more focused on the lecture and provide cues when a piece of information is missed.

**Participant Selection**

Recognizing the importance of external validity in this retrospective study and the desire to improve the potential for replication and generalizability of the study findings, researchers sought to conduct the process of participant selection with quality indicators. The primary participant (instructor) who is the subject of this case study was not selected in a randomized manner or predetermined method.
instead, he was selected to participate in this study based on the fact that he was the instructor assigned to teach the developmental English and learning skills courses, courses that students in a model demonstration project chose based on their academic planning and scheduling preferences. Therefore the participant’s selection was ‘determined’ by a complex interplay between his departmental assignment and the preferences of new college students in planning their class schedules. While his selection cannot be described as random, the researchers did not purposely manipulate selection and instead studied this “subject” who emerged as a result of the interplay described above. None of the researchers, project staff, or the student participants had any knowledge of the instructor, his prior experiences, or skills sets before the semester started.

Data Collection Methods

Project staff conducted three semi-structured interviews with the primary participant. The interviews were audiotaped and transcribed by graduate assistants trained in conducting qualitative research. Transcripts were reviewed with the participant to check for accuracy and meaning (member checking) (Denzin & Lincoln, 2000). In addition, two project staff independently took field notes and recorded observations of the primary participant and students with ID at each interval. Data was reviewed by the participant and corrected following each interval of data collection (Creswell, 2007).

The researchers reviewed and coded the verbatim transcripts moving from detailed coding to grouping codes into analytical categories (Merriam, 2009). The categories were used to establish (1) documentation of baseline or pre-intervention conditions, (2) midpoint status of expectations and behavior following intervention delivery, and (3) end of year status of expectations and behavior, including that of other faculty members interacting with the participant.

Data were then discussed and analyzed by three researchers to identify models of practice (Yin, 2003). There were minor changes made to the initial, established categories. Themes under each category were then generated using the grouping codes and critical clusters of data were assembled with the use of participant quotations to bring meaning to the findings (Merriam, 2009). In addition, as part of the case analysis, researchers engaged in validation strategies including triangulation (e.g., interview transcripts, field notes and observations from project staff).

Case Description and Underlying Findings

Description of Primary and Secondary Participants

To protect the identity of the participant and others in this study, names and places were anonymized. The primary participant (AP) was a junior tenure-track faculty member who teaches developmental English courses at an urban community college. The participant, who is a male of Japanese-American ancestry in his mid-30’s, has a Master of Arts degree in English but no additional formal training in teaching. He had previously taught English as a second language at a private university and Business English at a training program for foreign business executives. The participant is one of five faculty members who teach developmental English classes in reading and writing, and is the primary instructor that teaches “learning skills” classes at the college. Developmental English courses offer content remediation for students who are underprepared for college level English courses.

Secondary participants. Secondary participants consisted of 4 students with ID who registered for AP’s class, and who like the project staff, were affiliated with a model demonstration project to include and support students with ID in postsecondary education. All 4 students were in their first year at college and had previously attended the same urban high school. In addition, all 4 students were first generation, culturally diverse college students dealing to various degrees with the effects of poverty in addition to their academic challenges due to their ID.

Context/Setting

The setting is a medium sized, 2-year urban community college that serves approximately 4,600 students. This commuter college offers
53 programs (26 associate degrees and 27 certificates). The racial composition of the school’s population at the time of the study was: 41% Asian, 10% Caucasian, 23% Hawaiian/Pacific Islander, 14% mixed, 12% other. The faculty to student ratio is 14:1 and the student population is made up of 57% male/43% female (Note: reference will not be cited here in order to protect confidentiality of participants).

Baseline Descriptors

Project staff met AP on the first day of the fall semester, prior to his first meeting with students in his Developmental English/study skills course. The project staff established a positive relationship with the participant who agreed to be interviewed on 3 occasions over the span of 2 typical course semesters. Aligning with an AB design, in this retrospective case analysis researchers formulated the hypothesis to frame the study, then identified key data points through the analysis of quotes across the three data intervals (pre-, mid-, and post-) that detail the self-reported transformational experience of this participant. The data points or intervals were categorized and reviewed with the following structure: (1) consideration of baseline information, (2) introduction of the independent variable (intervention: guided notes), and (3) impact upon three pre-determined dependent variables.

(1) Consideration of Baseline Data (Prior to and Following Introduction to Students with ID)

In the passage below, AP reflects on the pre-intervention classroom context of students in his course and specifically, the school’s recidivism rate. Instead of being demoralized by this knowledge, AP uses it as inspiration for his own investigation of learning and professional development:

My first semester...I think I lost 40% of my students in one semester, which was a huge shock for me... [That was] when I became aware that a lot of students who are in the underprepared population have a lot of issues that they’re dealing with outside of the classroom that can impact their performance. And so, I had to become aware, as a teacher, of what those factors might be (AP, personal communication, December 18, 2012).

Participant’s teaching philosophy. AP has seen different teaching approaches come and go at the college. His responses frame what is apparently a blooming appreciation that teaching required more than just presenting information and expecting the student to be able to understand and synthesize the lesson. AP thinks that educators need to take responsibility for and commit themselves to working toward student learning. He describes himself as a “reflective practitioner” (AP, personal communication, December 18, 2012) who throughout his career, learns through reflection in the moment of teaching (Schon, 1983).

This participant believes that all students can improve and sees students’ growth as his primary motivator. “I wanna make sure that all of my students hit certain benchmarks so that they’re prepared for the next level” (AP, personal communication August 15, 2012). AP feels that he has a responsibility to his students to not only transition them to the next level but to ensure that they have developed essential skills. Here he expresses these personal values:

For me as a teacher, I need to know that when I pass a student on to the next class, they have the knowledge and the skills necessary for them to be successful. It would do no good for me to pass a student on just for the sake of moving them on to another class. (AP, personal communication, August 15, 2012).

Pre-conceptions. When he first learned that he had students with ID in his class, AP was initially apprehensive and made negative assumptions regarding the students’ conduct in class and the possible need to adapt his curriculum. He also pondered whether he was qualified to teach this population:

I think when I initially heard the term “intellectual disability,” I thought it would mean I would have an additional issue to worry about, or have to work through with the class... Number one question that I
had was ‘Would I have any problems with behavior?’ . . . I questioned whether I was qualified to teach students with intellectual disability. ‘Would it require extra time or effort?’ And I think the biggest concern that I had . . . was ‘Would I have to alter my course or curriculum in any way?’ (AP, personal communication, August 15, 2012).

(2) Infusion of Independent Variable—(Intervention Consisting of Guided Notes Instructional Strategy)

Guided notes is a note-taking strategy that has proved successful in improving quality of notes and improving test scores for K–12 and postsecondary students (Austin, Lee, & Carr, 2002; Haydon, Mancil, Kroeger, & Lin, 2011). The researchers presented AP with the strategy of utilizing guided notes to enhance student note-taking and therefore, student learning. Here the participant provides a description of guided notes:

Guided notes is really a principle of scaffolding. So, I’m providing a kind of rough outline of my, my lecture, but leaving out key terms and key concepts, so that at certain points in the lecture students will actually have to physically write down a word or a concept. So what that does is, it frees up the student from having to frantically write down everything on the board (AP, personal communication, August 15, 2012).

(3) Impact upon the Dependent Variables on a. Instructor, b. Students, and c. Other Teaching Faculty

AP embraced and immediately implemented the strategy of guided notes in his classes. The implementation of this strategy had a significant impact on his teaching style, on students in his classes, and on faculty colleagues.

a. Changes to instructor and teaching style. In the passage below, the participant reflects on the impact of guided notes to his teaching style and teaching outcomes:

I really find guided notes to be a wonderful teaching tool. I would call it miraculous in the sense that, when I use guided notes, 100% of my students are taking notes. I’m able to cover more material. The quality of the interaction between me and the students is a lot more lively and energetic . . . So, it just made me much more aware of, or I think it reassured me that my students were actually learning what I hoped that they were learning (AP, personal communication, August 15, 2012).

He recognized that the intervention requires additional preparation time but found that the outcome was well worth the time cost:

. . . there is an initial investment of time, but to me it’s completely worth it. I almost do not want to go into class without having prepared a set of guided notes. If I have an important lecture I will do it [guided notes] without fail because I find that it helps that much with the quality of the class, and the learning (AP, personal communication, August 15, 2012).

The participant was encouraged by improvements in students’ outcomes: “ . . . it [guided notes] helped me to see that they were making progress, and that gave me confidence that I was doing the right thing for these students, and that these classes were, in fact, beneficial for them because you know, I can measure their progress” (AP, personal communication, August 15, 2012). AP expressed gratitude for the experience of learning this new technique:

I just find myself enjoying the lecturing process so much more, which is something I wouldn’t have expected, you know? And yeah, it was like frosting on the cake. It was really wonderful (AP, personal communication, August 15, 2012).

Another change was made to the participant’s outlook on having students with ID in his classes. Utilizing an intervention such as guided notes provided a strategy that allowed all students (regardless of disability) to participate and learn.

. . . students come to me at all different levels of ability, they can all improve, wherever the starting point may be. I just noticed that there were certain teaching interventions that I can use that almost across the board, produce positive results in the students. Not 100% of the time, but much more . . . I sort
of re-thought doing the way I taught some things. But I haven’t figured out what works for everybody (laughs). But definitely as I’ve gotten more experience, I’ve gotten better at the job (AP, personal communication, December 18, 2012).

Reflecting on how he now felt about having students with ID in his classes AP reported on the positive impact students with disabilities had to his class in general.

If anything, it raised, I think, the quality of the classroom. I was more aware as a teacher of providing more instructional support for my students. . . . it just improved my outlook. I think seeing that, how much students can learn, in spite of . . . any label that they might have been given, made me realize that wow, there’s so much potential in everybody, you know? (AP, personal communication, August 15, 2012).

AP also recognized that he could no longer stereotype or label students because of their inferred disabilities.

. . . So often as teachers . . . we stereotype our students. Consciously or not, we think oh, they tested into “developmental” therefore they must only have this much potential . . . I actually pushed my students harder than I ever did. Doing more work, doing harder vocabulary. Because, I had the confidence that with the right support, and the right attitude, that anybody could learn. So, I would say that if anything, it actually improved the quality of learning in my classroom. (AP, personal communication, August 15, 2012)

b. Changes in students. The use of guided notes during lectures also produced changes in students. AP reported that this intervention assisted students to focus on the lecture at hand instead of their note-taking and thereby affords the students the opportunity to enjoy the process:

So they’re able to actually listen to me. I can actually see my students looking at me, paying attention to what I’m saying, understanding what I’m saying, but also writing down the essential information that they need to remember. It also frees me up as a teacher from having to scribble things on the board, so I’m able to provide a lot more illustrative examples? Tell more stories, without losing the point, you know. So, it works out brilliantly, I think, for both teacher and the students. I can cover more material, the students understand more, they’re more attentive, and you know, it makes it enjoyable, actually. I find myself enjoying the lecture process a lot more. Because my lectures are more organized, I don’t feel that the students are ever lost, and they’re much more focused and attentive, and, it just produces this really nice buzz in the classroom that, it makes things a lot more energetic and alive. So, I can’t really speak enough about it (AP, personal communication, August 15, 2012).

The use of guided notes also prompted students to be proactive in their own learning:

. . . if students missed something in the lecture, because they had the guided notes, they would know exactly what to ask me after class . . . I knew if students weren’t getting something, they knew they weren’t getting it, and they were asking me questions right after to make sure that they got that material . . . And so, the performances on quizzes and exams also improved as a result, which is, you know, everything that a teacher can hope for (AP, personal communication, August 15, 2012).

c. Changes to other teaching faculty. The third dependent variable was AP’s discussion with other college faculty about his experiences with guided notes and hopefully, their embracing the strategy. In his words:

I shared it with my colleagues, and when I tell [told] them you know, you should try this, you’ll see 100% of your students taking notes, they don’t [didn’t] believe me. They’re, incredulous, but I tell ‘em, you know, just give it a try. And they come back to me and say, ‘you know, you’re absolutely right, it just works, it works like a charm!’ (AP, personal communication, August 15, 2012).

There were also ensuing positive consequences to AP’s initiation into guided notes and his initial discussions with faculty result-
ing in movement toward perpetuating this ini-
tiative.

So, next semester I’ve already offered the
faculty development coordinator, I offered
that . . . I’d be more than happy to teach a
workshop on guided notes, you know, so we
can spread the practice around the campus.
And, I feel confident doing this because I
know that the, the professors will find better
results (AP, personal communication, Au-
gust 15, 2012).

Summary of Findings

We applied quality indicators for single-sub-
ject experimental design studies, as proposed
by Horner et al. (2005), to the conduct of a
retrospective case study for the purpose of
exploring the possibility of adding method-
ological rigor to non-experimental qualitative
research methods. Obviously, comprehensive
adherence and application of these indicators
to descriptive or explanatory research is struc-
turally impossible given that there is no direct
experimental manipulation involved. How-
ever, we found that overlaying the indicators
to the extent possible, in the conduct of a
qualitative, non-experimental inquiry was a
valuable exercise that yielded useful insights.
Conceptualizing a study this way pushed the
boundaries of typical research inquiry, but al-
lowed for the researchers to gain insight into
the effect of an intervention as seen through
the eyes of a single participant while also sys-
tematically considering and attempting to ad-
dress concerns related to rigor and generaliz-
able. Viewing the process through this lens
also allowed the investigators to consider fu-
ture areas and modalities of inquiry and more
critically evaluate the data and our assump-
tions. These findings indicate the potential
value of single-case studies aligned with qual-
ity indicators as espoused by Horner et al.
(2005) as a possible technique to expand the
evidence-base and rigor of disability related
strategies and practices.

Specific findings related to the actual case
study, as distinct from the above described
methodological exercise, appear to substanti-
ate the study’s hypothesis: “A simple instruc-
tional strategy (guided notes) introduced to
the practice of a typical junior college instruc-
tor will impact the instructor’s academic ex-
pectations of and behavior toward students
with ID in the classroom. In turn, these
changes will impact the experiences of other
instructors in the setting.” Findings reveal a
positive relationship between the intervention
(guided notes) and the participant, his stu-
dents, and his instructional faculty colleagues.

Limitations

The authors concede that the retrospective
case study presented here has a number of
methodological issues. That said, we add a
qualifier that a primary goal of the inquiry was
the exercise of applying of quality indicators
designed primarily for use with SSR to a case
analysis of potentially valuable data. In consid-
eration of the current analysis, several limita-
tions to this study must be acknowledged.
Inherent in most qualitative designs and cer-
tainly applicable to this study, are concerns
regarding characteristics and selection of the
sample and sample size, the role of researcher
and researcher bias, and the rigor of the
methodology employed. First, this study is lim-
ited to one faculty member at a community
college. The participant in this study hap-
pened to be a highly reflective and motivated
learner and (perhaps innately) understands
the important role that reflection plays on
meaningful learning (Kreber, 2001). Replica-
tion of the study with other participants, in
other settings, and with the same participant
over several semesters will promote generaliz-
ability.

Second, we offer responses and reactions
through the voice of our primary participant
(AP) but we do not include the first-hand
voices of the other faculty. The data that we
collected from the primary participant may in
fact be biased for the intervention. Collecting
data directly from the other teaching faculty
would provide the study with another layer of
rich, descriptive data and possibly further sup-
port our findings.

A third limitation is the lack of a clear de-
scription of how the researcher trained the
participant in the use of the intervention
(guided notes). Detailing a systematic proce-
dure and/or recording (and transcription) of
this process would assist with ensuring fidelity
of implementation and increase opportunities for duplication and generalizability.

A fourth limitation addresses the students in the developmental English class, considered secondary participants in this study. As we did not collect data from the entire class, we do not know a) the reactions of all of the students in this class; b) whether or not it would make a difference if we compared the reactions/responses of students with ID with students without ID.

Implications

In terms of methodology, qualitative case studies aligned with SSR quality indicators may provide researchers the opportunity to document and analyze the complex context of the teaching and learning process with increased rigor. A critical aspect of this process is interaction of personal and professional traits and skills of the instructor with the elements of the intervention. These traits further interact with the disposition of the student(s), their readiness to take part in learning (to interact with and to grow as part of the teaching process) and their desire and motivation to learn from the teacher—these complex interactions are part of the process of teaching and learning. These interactions can best be studied through qualitative case analysis reflecting quality design features and methods.

It was apparent within the case study data presented that the teaching and learning process was significantly impacted for the participant instructor and his students with ID (other students and instructors were also impacted). The resulting positive outcomes of perceiving students with ID as viable learners, and adjusting instructional behaviors based on those perceptions, led to changes in the students’ motivation and approach to learning, as well as the desire of other instructors to adjust or improve their instruction. This interaction between intervention, instructor and student, resulting in a chain reaction of positive outcomes could only be captured through a qualitative research design. Applying quality design features to future single and multiple case studies should be conducted with instructors and students in a similar postsecondary education context to determine if a similar interaction and chain reaction can be found.

The reported case analysis of a postsecondary education instructor working with students with ID provides incentive for researchers to further explore the value of simple interventions such as "guided notes" to positively change instructor expectations and student behavior. Based on the study’s findings, a number of issues are raised that have wider implications for post-secondary faculty, college students (with and without ID), and administrators who make funding and programming decisions.

Without appropriate training in evidence-based strategies, faculty members in higher education, especially in core subjects of English and Math, may have negative perceptions and thus low expectations regarding the inclusion of poor performing students in their classes (including students with disabilities). Other instructors may simply not be aware of teaching strategies when working with students with diverse abilities, nor be aware of possible accommodations. Our analysis suggests that faculty who adopt the guided notes intervention will find that the strategy produces positive outcomes to both students and instructor. Postsecondary administrators must ensure that their instructional faculty members have the tools and resources necessary to teach all students.

Many students at community colleges are academically underprepared, lack social and cultural capital (e.g., a first generation college student) or have challenges that impact learning (including students with ID). All of these students could potentially benefit from instructors who utilize guided notes and other universal design for learning strategies that teach “all learners.” This point is best made by the primary participant in this study, as stated during his last interview:

...I think including these students in a college setting is necessary for a college to grow. You know, for it to really realize, its own mission of helping students and, to achieve their academic goals, their human aspirations, their dreams, whatever it is. You know, I’m kind of waxing poetic here, but I really feel that deeply about it. That we, as teachers cannot really become fully who we are intended to be as teaching professionals unless we reach out to students like this. So,
yeah, I think it’s been a very rewarding experience in that sense (AP, personal communication, December 18, 2012).

In conclusion, we acknowledge and thank the many researchers who have contributed to the development of quality indicators for single subject research. By applying the quality indicators, the authors sought to design and conduct a retrospective case analysis resulting in findings with increased utility and credibility. The experience was one that provided positive study outcomes and should contribute to the valued use of qualitative designs in future studies.

References


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