

A Rationale for the Use of Case Reports in Special Education: The Significance of Detailed Descriptions of Assessment and Intervention Scenarios for Bridging the Research-to-Practice Gap

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Case reports make up a significant part of the medical literature by documenting unique clinical scenarios or exemplary treatment practices from which real-life lessons can be learned. But while such studies play an essential role in medical research, they rarely appear in special education journals. Competently assessing and instructing children, adolescents, and adults with special needs is complicated. Case reports that explicitly illustrate how to carry out such challenging tasks could be just as helpful in special education as they are in various medical fields. In this paper, we argue for the importance of such accounts and provide guidelines for how to structure them as a sound scholarly outlet.

Keywords: case reports, research-to-practice gap, best-practice examples, special education research

EARLY EXAMPLES OF CASE REPORTS IN THE SCHOLARSHIP OF SIGMUND FREUD

Sigmund Freud (1856–1939) was without a doubt one of the most influential thinkers and theorists in the field of psychiatry (Moran, 2018; Vivas, 1989). Believing that human beings are strongly influenced by their unconscious thoughts, feelings, desires, and memories, Freud viewed mental illness as a result of intrapsychic conflicts in the ego between our animalistic impulses, located in the id (that we often repress and are not aware of), and the inability to organize and synthesize our internalized moral standards, located in the superego. When id and superego clash, the equilibrium of our emotional wellbeing is disrupted. Freud developed psychoanalysis as a therapeutic method that treats symptoms by bringing troubling unconscious forces into consciousness. As soon as these

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forces are out in the open, Freud maintained, the therapist and the patient can discover paths toward the emotional freedom necessary to make essential, long-term changes, and heal from past traumas (Freud, 2011).

In his widely received paper “Freud Is Everywhere,” Blum (2017) proposed that the originator of psychoanalysis has influenced our language, our perceptions, and our culture more than anyone else in the 20th century. Contemplating Freud’s accomplishments begs the question of how he gained the insights into the human psyche that are still considered groundbreaking to this day. After all, he was not a researcher. As Hall (2015) rightly pointed out: “His approach was not scientific. He never tested his ideas with experiments that might have falsified his beliefs”. Instead, Freud’s way of trying to understand the human mind was to carefully document particular cases and compare them to each other in order to find common characteristics. Further, he expanded the standard practice of merely filing basic information on a patient by placing a patient’s presenting pathology into the perspective of his or her whole life (Willemssen et al., 2017). As such, Freud’s extensive accounts of “Little Hans,” “the Wolf Man,” or “Anna O.” are still well known far beyond medical circles.

From today’s vantage point, Freud’s case reports seem too subjective and somewhat outdated. Sulloway (1991) even goes as far as proposing that they are “rampant with censorship, distortions, highly dubious reconstructions, and exaggerated claims”. While it is easy to criticize Freud’s analyses as outdated and based on 19th-century cultural assumptions of “normality” and “mental illness,” it is important to keep in mind that at that time there was no tradition in psychiatry of trying to maintain a high level of objectivity when keeping records of one’s observations.

CASE REPORTS VS. SINGLE-CASE ANALYSES AND QUALITATIVE CASE STUDIES

Ever since Freud started to write reports that went far beyond what was common in his day, the art of carefully documenting particular cases has become far more objective, sophisticated, and innovative. And as a result, such studies have become an indispensable option for acquiring and promoting knowledge in various medical disciplines, and often mark the start of a new strand of applied research by identifying practical problems in need of scientific attention and investigation. For example, after a phenomenon has been studied in more detail within the scope of (first) small pilot studies and (later) large-scale trials evaluating the effectiveness of different therapies, case reports can serve as guidelines to help practitioners expertly implement all the relevant findings on assessing and treating a given illness with a specific patient (Thomas, 2021).

These types of clinical papers are not to be confused with single-case analyses or qualitative case studies, which serve different purposes. Admittedly, the line between these three approaches is blurred, and they are oftentimes not

accurately separated in technical language. For the sake of clarity, in the current paper, we limit the meaning of the term *case reports* to in-depth documentations of noteworthy scenarios for scientific purposes. A scenario can be a person's unique symptomatology or an example of a best practice (in relation to an assessment, treatment procedure or an intervention).

In contrast, single-case analyses are aimed at determining a clear impact of treatment following the onset of an intervention with one individual or a very small number of subjects. This type of research employs quantitative techniques to statistically test the effectiveness of an intervention. In medical research, single-case analyses come into play after a certain phenomenon has come to the attention of the scientific community and a proposed treatment needs to be evaluated. For example, they can be applied to statistically test the effectiveness of an intervention for a rare disease or to improve practices and therapies within a particular clinical setting (Morley, 2018). Onghena and Edgington (2005) illustrate the use of these designs in medical research by providing several examples of implementing them to test the effectiveness of various pain medications. In different phases of the study, a patient is alternately given a newly developed analgesic or a placebo (without letting the patient know which is which). Depending on the level of discomfort that the patient reports during the experiment, conclusions can be drawn about the effectivity of the medication.

By contrast, qualitative case studies explore the meaning of someone's experiences, as the aim here is to reach an understanding about a person's inner life framed within his or her social circumstances (Creswell, 2009). Within a medical context, qualitative case studies help researchers to comprehend how patients experience a phenomenon, such as developing obesity, within a social context. For example, *obesity* exists in medical terms as a disorder marked by an abnormally high, unhealthy amount of body fat, caused by genetic, behavioral, and environmental factors (Sbraccia & Finer, 2019). However, the condition has also taken on significant cultural meaning because of its stigmatizing effect. In a society that places great value on thinness and outer appearance of health, being obese can be difficult. Indeed, the cultural meaning of the disease has led to loss of status, marginalization, and discrimination of people living with this condition (Latner et al., 2014). In this context, qualitative case studies may examine someone's perceptions and emotional responses to living with obesity and how being overweight in an environment that reinforces lean and physically fit individuals may affect quality of life (Wu & Berry, 2018). Thus, unlike case reports, qualitative case studies conceptualize the patient's perception within a wider cultural, social, and economic context.

THE SIGNIFICANCE OF CASE REPORTS IN MODERN MEDICAL RESEARCH

To illustrate the distinctness of case reports and mark how these can lead to the beginning of a particular field of study, as well as play a decisive role

when a vast amount of evidence has been accumulated on the topic, we are going to outline the development of the medical research on Human Immunodeficiency Virus (HIV) and Acquired Immunodeficiency Syndrome (AIDS).

In 1981, Michael Gottlieb, a 33-year-old assistant professor at the University of California, came across a young gay man with unexplained fevers, marked weight loss, and a seriously damaged immune system. Shortly afterwards, Gottlieb heard of a few other cases with similar symptoms. In documenting them carefully, he began to see patterns and realized that he had made a major discovery. He published his descriptions of the cases, which quickly became some of the most heavily quoted papers in medical literature at the time.

Gottlieb had documented a phenomenon that would become known as AIDS, an effect of an infection later identified as HIV. He did not conduct any clinical trials or controlled experiments. All he did was systematically present different cases. And yet, his publications must be seen as the groundwork for a whole new field of research in medicine (Fee & Brown, 2006). Today, we have a wide array of antigen, antibody, nucleic acid, and other tests to diagnose HIV/AIDS. And while there is still no cure, we have effective treatments typically involving medications that stop the virus replicating in the body that enable patients to live long and healthy lives.

The number of systematic literature reviews and meta-analyses on the diagnosis and therapy of people with HIV/AIDS in the database Medline alone comes close to 7,000. Thus, the research base on this topic is exceptionally broad and differentiated. The same is true for case reports. Just in the past five years, Medline has indexed far in excess of 2,000 detailed descriptions of how to apply the accumulated knowledge on assessing and treating HIV/AIDS with all different kinds of patients.

THE OVERLOOKED ROLE OF CASE REPORTS IN SPECIAL EDUCATION JOURNALS

Riley et al. (2017) presented a list of 91 scientific medical journals devoted to case reports, all indexed in prestigious databases (e.g., Scopus, Medline, PMC) and published by Elsevier, Sage, Wiley, and other renowned publishers. But whereas case reports are common in the scientific medical literature, they play a much less prominent role in special education journals. Maria Montessori, Jean Piaget, and many other early pioneers in the field of child development reported extensively about their observations on how learning occurs. However, their work on describing particularly interesting cases has not developed into a tradition to the same extent as is the case in the medical field. That is, while Freud initiated a trend that is continuing in his discipline, the scholarly field of special education has not relied much on case reports as a means of moving the field forward.

This seems unfortunate. Human beings are very complex creatures, and just as there are inscrutable cases in the field of medicine, so there are intriguing situations within an educational context, where a student shows an unconventional set of strengths and weaknesses. For example, a tiny fraction of children approaching the end of elementary school and beyond have high reading comprehension but low word recognition. At first glance, this discrepancy does not seem to make sense. But while this population of students is rare, they do exist. Hence, it would be interesting to describe such unusual cases in detail to gain more understanding of these phenomena.

Moreover, it is widely recognized that the research-to-practice gap in special education is extraordinarily wide (Johnson & Semmelroth, 2013). The empirical knowledge base on how to best teach children, youths, and adults with special needs is in many aspects strong and stable. But, unfortunately, far too little of what has been documented in a research context is being appropriately applied in real-life settings, often because practitioners find it difficult to use the relevant findings in the classroom (Fleming, 1988). That is, applied special education research needs to be made accessible to practitioners.

Studies should be geared towards producing evidence-based practices that professionals can build on. This requires a rigorous evaluation of a given approach in real-life settings with results that clearly reflect its effectiveness. However, we have to wonder how effective research studies that promote certain practices can be in moving the field forward, if they are not described and disseminated in a manner that is accessible for practitioners.

This is where case reports can come in. If professionals do not know how to implement certain research-supported principles, techniques, or programs in their daily work, case reports might illustrate how it can be done. A “case” in this context can be a single student, a small group, a class, or a whole school. If professionals are able to refer to a documented portrayal of a successful intervention, activity, or method, they are more likely to successfully emulate it in their own teaching practice. Hence, case reports will be more accessible than in current practice, as teachers have to translate empirical findings from academic research reports into feasible teaching plans.

A PROPOSAL FOR HOW TO STRUCTURE CASE REPORTS IN SPECIAL EDUCATION

Rison (2013) provides a rationale behind the common structure of case reports in medicine. He explains why this kind of academic text should always entail the following components: (a) introduction, (b) case presentation, (c) discussion, and (d) conclusion. Riley et al. (2017) introduced a step-by-step checklist designed to help authors consider every aspect that a sound medical case report should contain. Naturally, the items on the list refer to “patients” and utilize clinical terminology. The content alludes to medical care and service, so

it cannot simply be applied to other contexts. However, taking Rison's (2013) proposed structure and using the list by Riley et al. (2017) as a stimulus for developing guidelines, we recommend that researchers use the following elements when writing a case report in education:

Title

The title of the paper should identify the text as a case report. It is advisable to include the term *case report* in the heading. The title should also embody the main focus of the paper. For example: "Social skills training of a 13-year old girl with hyperlexia: A case report."

Abstract

If the paper is designed to be submitted for publication in a scholarly journal, it is usually required that it includes an abstract and key words. The abstract should be a condensed version of the entire manuscript and should only include information that can be found in the main text. In most instances, it contains a short description of the participant(s), including all relevant diagnoses and symptoms. If an intervention was carried out, this should also be noted. The following is a sample abstract:

"Velocardiofacial syndrome (VCFS) is a rare kind of a genetically caused learning disability. The successful job integration of young people with this condition remains an exception rather than the rule. This case report describes the vocational training of a male adolescent with VCFS, who attended an inclusive secondary school in urban Canada. A carefully conducted assessment revealed his limited ability to process information relating to everyday cognitive tasks and to specific academic domains like reading or arithmetic. The study illustrates how key empirical findings can help design a promising transition plan that focuses on acquiring critical job-related skills as well as on forming strategic partnerships. With the help of his transition specialist and his teachers, the young man was able to find a job as a gardener on a community college campus straight after his graduation."

Key Words

Most journals require authors to choose three to five key terms to allow for ready retrieval of the study through relevant search databases. Key words must represent the main topics of the manuscript. Within this context, they should include the term *case report* to quickly identify the type of publication.

Introduction

The main text should always start with a comprehensive introduction, where the authors provide readers with the context for the case. A sound introduction also defines the challenges in question; for example, in a case about an intervention for a student with a specific learning disability, the introduction should describe the effects of the impairment with regard to teaching and learning, making note of the (disabling) environmental implications concern-

ing participation in the classroom and wider societal implications.¹ It should also go into the current research-supported strategies for teaching and assessing these students, and provide a research-based argument for applying a particular (diagnostic, intervention, and/or environmental adjustment) procedure that fits the case.

This part is crucial, because it must comprehensibly and persuasively propose an empirically based solution to a real-life problem. That is, the authors need to convincingly demonstrate that they are familiar with the relevant literature and can translate the main gist of a particular strand of research into a viable plan of action for a certain case, including the key factors that were the catalysts for their decision-making. Oftentimes, it is more practical to end the introduction with a short statement on the noteworthiness of the presented case and/or the empirically validated practices the report will illustrate and why, rather than with a research question in the narrower sense. An exemplary introduction may be found in the study by Mammarella et al. (2009), focusing on a child with a nonverbal (visuospatial) learning disability.

Case Presentation

In this section of the paper, the case needs to be depicted in detail. If the study focuses on an individual, readers should have an opportunity to learn every relevant piece of information about the person. This usually includes (but is not limited to) age, gender, ethnicity, schooling, special needs status, family background, socio-economic information, past special educational interventions, and medical history. The same fastidiousness in reporting details is appropriate for a group of two students where one student is tutoring the other, a small group of students being taught by a teacher, a whole class, a school, or any other unit that constitutes a case. Any assessment procedures must also be described with enough precision to be replicable. The diagnostic instruments that were used should, in principle, be available to the readers. If the results of the assessment are significant for understanding the uniqueness of the case, they should be presented in a clear and well-arranged form (preferably utilizing tables and/or charts). Interventions or environmental adjustments and their outcomes should also be carefully documented.

When writing this section, authors must keep in mind that the purpose of case reports is to present real-world scenarios that serve the purpose of enhancing skills development. As such, they should enable readers to better recognize the effects of impairments and disabling teaching environments, to better conduct specific interventions, and to make any other improvements in their work as it relates to the study (Mortimore & Dupree, 2008). Visual supports such as graphs, diagrams, or photos are often helpful. Finally, this section should

1 To view an example of how the classroom can become a disabling teaching environment for students with dyslexia, see Mortimore and Dupree (2008).

be written in such a way that the absolute anonymity of all involved individuals or institutions is preserved. An exceptional case presentation (about a boy with developmental deep dyslexia) may be found in a study by Temple (1988).

Discussion

The purpose of this part of the paper is to critically reflect on the case presented in light of the literature: What insights can be gained from what has been explained and demonstrated? Was every significant detail included in the account? Was all relevant information reported with sufficient accuracy? In hindsight, should the assessment, intervention procedures, and/or environmental adjustments have been done differently? What about any biases with regard to decision-making or highlighting certain details of the case? As in the discussion section of every other kind of scholarly paper, the authors need to step back and look at their work with some perspective, trying to take a balanced view.

Conclusions

Rison (2013) suggested embedding a separate section on conclusions in a case report, but this part is often integrated into the discussion and constitutes the last element of this section. Regardless, authors should always present a clear take-home message at the end of their paper. Case reports in special education journals serve the objective of sharing novel observations about certain phenomena (e.g., rare set of learning characteristics in a person) and/or aiding professionals in gaining insights into how particular evidence-based assessment or intervention procedures can successfully be applied in real-life settings. As such, the conclusion section should always highlight the key concepts of the text with regard to these purposes. In addition, it must suggest future directions: What questions did the case report leave unanswered? What are the next steps in the research process? What are the blind spots in research that need to be addressed? An article by Joshi and Vankar (2015) on a 10-year-old child with an intellectual disability who was addicted to gasoline provides a good example of what the discussion and conclusions sections of a case report should look like.

In the main text of the manuscript, the case presentation usually takes up the greatest part, followed by the introduction. Both of these sections are usually divided into several subsections, each with its own subheading. The discussion is typically longer than the conclusions, but considerably shorter than the introduction or the case presentation.

Clearly, the case report structure proposed in this article is not intended to be taken as a mandatory guideline. It might sometimes be more reasonable to follow the standard outline of an empirical paper (Introduction, Methods, Results, Discussion) as, for example, in the study by Plotts and Livermore (2007), where the authors describe the unique cognitive characteristics of a young adult with severe learning problems and Russel-Silver Syndrome. In this case, the authors outlined the description of the participant and of the diagnostic proce-

dures in the methods section and presented the findings from the assessment in the results section.

A CALL FOR MORE CASE REPORTS IN SPECIAL EDUCATION JOURNALS

For the reasons presented above, we believe strongly that case reports should play a more important role in the scholarly special education literature. The argument is not to medicalize the learning process for children, adolescents, and adults with special educational needs, but to propose a systematic approach to sharing successful educational assessment practices and interventions. Thus, case reports should not describe what individuals can and cannot do based on assumptions concerning their impairments, but accurately describe successful educational or environmental interventions to facilitate learning and inclusive practices within an educational, not medical, context. Outlets that have published these kinds of studies in recent years include *Education and Treatment of Children*, *Educational Research Quarterly*, *Insights into Learning Disabilities*, *Support for Learning*, and *Teaching Exceptional Children*.

Despite such progress, finding a “home” for case reports is not easy. While a systematic search of relevant databases (e.g., PsycINFO, PubMed, ProQuest, Scopus, Web of Science, ERIC) yields an impressive number of case reports about individuals with special needs, almost all of them are published in medical journals, focusing on the medical challenges of the participants and on medical interventions. Thus, the articles that we referred to above as exemplary were published in *Applied Neuropsychology*, *Neuropsychological Rehabilitation*, and *Substance Abuse: Research and Treatment*. Yet, none of these publications consider special educators as their primary target group. At this time, it is extraordinarily difficult to find case reports that present specially designed instructions for meeting the unique needs of exceptional children, adolescents, or adults because most journals in special education do not publish case reports at all (or only a very limited number).

The then-editor of the *British Journal of General Practice* rightly pointed out: “Medicine cannot be learnt without case histories ... especially when the cases are similar to those we have managed and when the authors have worked hard to deepen their own understanding and to bring out the learning” (Smith, 2009, p. 383). There is no reason why this should be any less true for special education. Dealing with unique human beings in this profession is very demanding and complex – just as it is in medicine. Learning from well-documented and empirically rooted best-practice examples can be an invaluable addition to the toolkit of teaching practitioners. In special education, with its wide research-to-practice gap, the need for such sharing of ideas and resources seems especially fitting.

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