Is it Insight or Hindsight?

Nathalie Barr Lecture delivered at the ASHT Annual Meeting, Atlanta, September 2006

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A couple of years ago, one of the therapists working with me asked me to look at a patient with her. The problem was difficult and the therapist made the comment that I had good insight into what could be done and that they needed my help. I laughed, saying ''you know, I have been doing this for so long you may be confusing insight with hindsight. I have seen so much, maybe what you see are decisions based on past mistakes and my desire for those not to be repeated.''

Since that conversation, I have reflected on it many times. What is insight? Arthur Koestler says, ''The moment of truth, the sudden emergence of a new insight, is an act of intuition. Such intuitions give the appearance of miraculous flushes or short circuits of reasoning.'' He goes on to describe insight as a chain of intuitive, subconscious thoughts that has a beginning and an end linked together and emerging as a conscious thought or realization.

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Early in my career, I had the opportunity to work at Oklahoma Children's Memorial Hospital in Oklahoma City. Being a teaching hospital, many of the patients seen were followed for several years in the many specialty clinics. This gave us the opportunity to become close to many of our patients and their families.

One day last summer, I received a call from one of my referring physicians. He told me he had someone in his office from my distant past and he wanted me to fit her with a splint that was needed. He would give me no further information. Into my office walked this beautiful, articulate young woman. I had seen her as an infant and toddler as she was born with Vater's Syndrome which included spinal deformities, bilateral radial club hands, and absence of the thumb. She now had carpal tunnel syndrome in her dominant hand, which was her more functional hand. Unsure of what was actually occurring in the already ''abnormal'' hand, the physician was hopeful that conservative management would take care of the problem. He did not want to be challenged to explore her wrist, because he was unsure of what might be found anatomically. I was also faced with a challenge, needing to construct a typical cock-up splint to accommodate a hand with no anchoring thumb.

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The real joy of taking care of this patient was the satisfaction of seeing how well she was doing in the world…someone that many people would have felt had a tragic beginning. She told me that she was attending graduate school with the goal of becoming a speech pathologist. She wanted to help people adjust to disabilities, much as various people had helped her in the past.

She shared with me that she ran a blog site on the Internet,

which focused on interacting with parents of children with Vater's Syndrome, helping them to understand their child's potential and looking beyond their physical deformities. It seems that as a toddler, her parents had made a decision (possibly from being overwhelmed) that they had had enough. As a typical response from a parent of a child with congenital deformities, they wanted to do everything they could to make their child look as "normal" as possible. Because of this their daughter had undergone multiple surgical procedures in her early life in an attempt to correct some of her deformities. Somewhere along the way they had a feeling (intuition?) that they needed to stop and see how their child developed. They were fearful that some of the suggested surgical procedures might make permanent changes in their daughter's hands that were not in her best functional interest.

Crystal went on to tell me that in hindsight, they had made a good choice. One of the procedures would have been to centralize her wrist in a more normal position and she would have had difficulty doing some of the activities that are now very important to her, such as playing the piano and using the computer. She was sharing this insight/hindsight experience to help others and to encourage these best intentioned parents.

> "Don't violate the 'to-for' rule—you can do more *to* a patient than *for* a patient." Peter Carter, MD

That encounter affected me deeply and I have reflected on it a great deal. At what points in my life did a seemingly small decision impact what my life is today? In the 1998 movie Sliding Doors, the movie depicts a point in time where the closing of a subway door sets a series of events into play. In one presentation, the main character is running down the stairs to catch a subway train when another passenger momentarily blocks her way causing her to miss that train and she has to wait for the next train. The second presentation shows the same scene with her avoiding the other passenger and catching the train. The remainder of the movie shows two parallel versions of that person's life based on that one small event…the effects of not keeping an appointment due to the missed train, different people that were met because of that missed train. These are the small events that when all wrapped up together become a person's life.

When I was that young physical therapist working in the university hospital system, we were assigned to the various specialty clinics to provide therapy coverage for the physicians as they worked with the residents. Among other clinics, I was assigned to cover hand surgery clinic for both the orthopedic and plastic surgery departments.

During a busy clinic, one of the surgeons approached me and gave me a letter with an application to a new organization that was being developed for PTs and OTs interested in specializing in hand therapy. The first meeting was being held in Dallas. My interest was piqued by the letter and the meeting was being held nearby, so I filled out my application. From this process, I was accepted to become an Associate Charter member of the American Society of Hand Therapists in 1977. What seemed to be a minor decision that day was the sliding door in my career.

At that time, Oklahoma City was not exactly the Mecca for hand therapy like Philadelphia, Phoenix, or Indianapolis. To learn more about the field, I spent time with various therapists in their clinics, that is, Evelyn Mackin, Pegge Carter, and Nancy Cannon. It was an exciting time for our profession. At that time, there were not many OTs in Oklahoma and the OTs with whom I worked were interested in pediatrics and sensory integration, not hands. So, I took it upon myself and learned splinting, spent time observing in surgery, and studied techniques outside my realm of physical therapy.

The concept of hand therapy as a specialty blending both for the professions of OT and PT was not met without controversy and territorial battles. It is amazing to reflect back on the times when I was barred from the splinting room in the hospital OT department or when I was pulled into a battle between the orthopedic and plastic surgery departments. You see, the hand surgeons were experiencing some of the same growing pains in their profession as they tried to blend the training of orthopedics and plastic surgery.

Meanwhile, research was being performed on tendon healing and early controlled mobilization by surgeons such as Burkhalter, Brand, Hunter, and Kleinert and therapists such as Evans, Mackin, and Cannon. Due to their work, therapeutic management techniques were changed not only in the field of hand therapy, but also in other related orthopedic fields. Due to outcomes in our field, patients undergoing ACL repair or rotator cuff reconstruction began to be rehabilitated with early motion and showed favorable results. Our philosophy of handling tissue more gently to lessen formation of scar tissue began to be incorporated into wound management techniques. Many of the biggest changes in our therapy professions were seen in the 1970s and 1980s and were influenced by the work of hand therapists.

At the same time our professions were undergoing change, our new society was also experiencing challenges. The goal of the society was to recognize therapists with specialized knowledge

in hand therapy. We developed a membership application process modeled after that of the American Society for Surgery of the Hand. A candidate for membership in ASHT had to submit a log of patient visits and diagnoses in addition to detailed case studies of patients that displayed knowledge of anatomy, understanding of tissue healing, reasoning behind chosen therapeutic techniques, and expected outcomes. These applications were reviewed by a group of experienced hand therapists, and membership could then be granted on an associate or active level based on the amount of experience of the candidate.

Membership in the American Society of Hand Therapists became a sort of credentialing process, which was never the intention of the organization. ASHT membership began to be listed as a condition for hiring, and therapists were using ASHT after their names as if it was meant to be a degree or license. The leaders began to be challenged as to what membership meant…the process was relatively subjective in its nature, but was beginning to be used as an objective measure of competence. But still, the desire was there for this maverick group of therapists to be recognized for their knowledge and skill base. What was the answer?

> "The best vision is insight." Malcolm S. Forbes

At that time, a group of our leaders began to envision that we needed to develop a means of objective measure of a therapist's knowledge in the field, one that could stand tests of validity and consistency. A task force was formed to study the issue and in the late night hours of a board meeting being held in Anaheim in 1983, Mary Dimick presented the results of the investigation. We needed to develop a certification examination which could be administered much the same as our original professional licensure examination. The examination would be developed in consultation with nonbiased testing experts who would provide a means of statistical analysis of the results. The recommendations of the task force were adopted by the Board of Directors and the quest was set. This was our profession's sliding door.

Further investigation into the process showed that this was not going to be easy. To follow the steps recommended by the testing agency would involve a tedious process beginning with a practice analysis in which therapists working with hand patients would be surveyed as to the various therapeutic interventions that they performed in their clinics on a daily basis. This survey would determine if our specialty was adequately different to justify a certification examination. Our first practice analysis was performed in 1985 and gave us the charge to continue. Mary Kasch was then appointed the chairperson of the Certification Committee of ASHT in 1986. Based on further review and compilation of these surveys, the testing company guided us in developing a blueprint of the examination to determine how many questions in each domain of our hand therapy knowledge base would be asked on the examination, which was based on frequency of various tasks performed in the clinic (Figure 1).

An extremely structured process would be followed for writing the items for the examination with specific parameters, style, and psychometric specifications. The initial group of 17-item writers met in San Diego in February, 1988. These therapists underwent training by our testing company and spent several days developing those 600 initial items. Field testing was then performed on these initial items to establish difficulty and evaluate performance of the items themselves.

The task began to sound overwhelming. To follow all the steps recommended by the test consultants revealed this was a goal not to be achieved overnight. The expected date for the first examination was May 1991, eight years in the future from the initial recommendation.

> "Give me insight into today and you may have the antique and future worlds." Ralph Waldo Emerson

But, before any of these steps could be taken, decisions needed to be made by the society. To meet the standards of National Organization of Competency Assurance, the testing agency shared that it was necessary that a separation occur between the society and the examination. ASHT needed to continue on as a membership organization and a separate commission needed to be formed to develop and administer the examination, one with its own board of directors, which would not be influenced by the actions of the society. Even more controversial to the membership was that their current membership in the society could not be grandfathered into a certification in hand therapy without taking the examination. At the annual meeting in 1989, the membership discussed the issues, voted, and showed that they shared the vision by approving the recommendation to continue as directed by the consultants. At this point, the Hand Therapy Certification Commission (HTCC) was born.

To add another task to the already overwhelming number of steps in our certification process, the testing agency also recommended that the certification must be maintained current through an established procedure of continuing education and direct clinical experience. Another committee was developed within the commission to develop and prepare to administer a recertification process…before we had

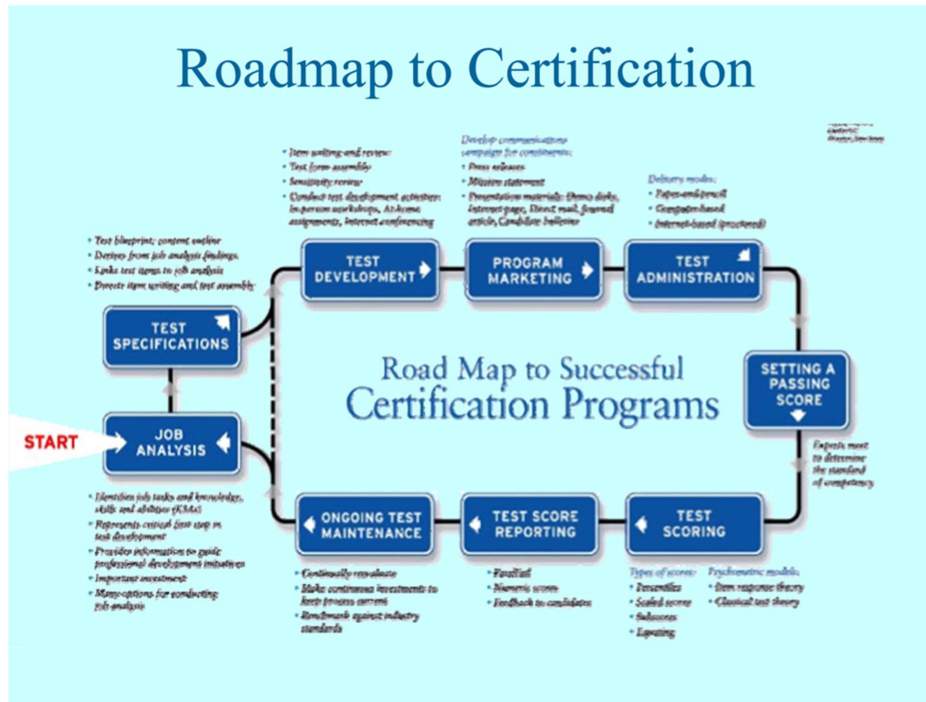

FIGURE 1. Steps to be taken to develop a certification examination.

even administered our first examination.

What would make a small group of therapists, driven by their determination to prove themselves as distinct specialists, take on such a daunting task? Passion…the belief that hand therapy really was different, a profession not adequately taught in undergraduate studies of either profession, but in postgraduate study and clinical experience. That passion brought the insight that placed us on the right path and gave us the energy and momentum to proceed.

> "For passion, be it observed, brings insight with it;
> …it can give a sort of intelligence to simpletons, fools, and idiots, especially during youth." Honore De Balzac

Youth, passion, and drive were on our side…little did we know that 20 years later, the decision made in that cramped meeting room in 1983 would lead to a credential recognized by therapists as a standard of excellence, not only in the United States, but throughout the world…Canada, Australia, New Zealand, Great Britain, Ireland, and the Netherlands.

The initial examination was administered to 1,212 therapists at six different locations in the country. Since that time, there have been a total of 5,016 therapists certified in the United States, Canada, Australia, and New Zealand. In this total, 85% of the therapists are occupational therapists, 15% are physical therapists, and approximately 1% of these therapists have degrees in both occupational therapy and physical therapy.

The level of success of the examination was not predicted by the society or the commission. In fact, at one time we had forecast our own financial failure thinking that after five to six years we would have tested most therapists who were interested in becoming Certified Hand Therapists and the cost of using the testing agency to administer the examination would override our funding from candidates. This has not been our experience and the level of interest has continued and testing numbers have stabilized over the past 10 years (Figure 2).

Also to our pleasure, the enthusiasm of Certified Hand Therapists to recertify has remained high. Even with the lapse of 16 years between our first examination and our present date, more than 90% of CHTs consider their certification to be of sufficient importance to maintain in both education and application (Figure 3).

The testing has not been met without periodic questioning of stringent qualifications required to sit for the examination and the expectation of continued clinical involvement through direct patient care, research, or teaching to maintain certification. Adjustments have been made through the years based on recommendations of candidates and CHTs, which are then taken to our testing agency for evaluation of possible impact of any changes in procedure and how they would impact the validity of our exam's performance. Recognition of the high standard and quality

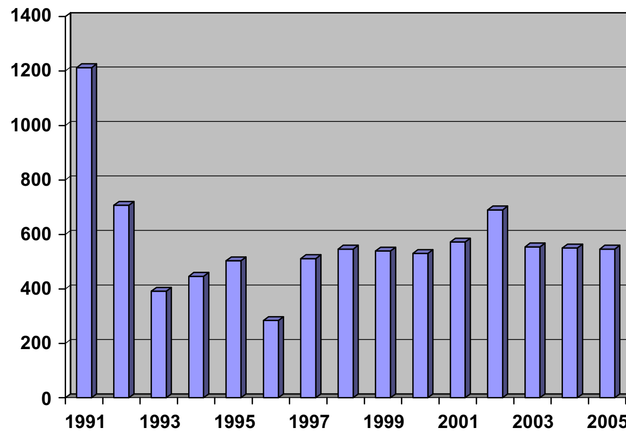

FIGURE 2. *Number of candidates tested by year.*

of the credential has always been of the utmost importance. Following a manner of administering and providing the credential in a nonbiased fashion to all qualified therapists without compromising that quality is the mission of the Commission.

One of the most questioned procedures of the examination process is the exam items themselves. Questions are asked such as "who in the world wrote this question," "this question seems ambiguous," or "is this information still relevant?" Being the chairperson of the Examination Committee, I would like to address this procedure with you.

The procedure revolving around composing an individual item that is placed on the exam is extensive. Item writers for the examination are chosen through an application process that scores those individuals based on experience and area of expertise, previous experience on similar examination processes, time spent in teaching or research. Finally, consideration is given to the final group chosen as to the geographic and professional mix of PT and OT. It has been our experience that hand therapists view this as an important process as we had over 100 applicants for the 14 positions in our most recent item writer's workshop.

Following selection of a group of item writers, a workshop is held during which these item writers are trained by our testing agency. They are instructed to compose an item that is direct without hidden meaning, they are not allowed to write an item that is negative in nature, that is, being asked a question that leads to all answers being correct except.... They are not allowed to write questions that ask a candidate to choose the correct method between two commonly accepted practices. All potential items must be referenced with current published material. After the items are written, they are processed through a group review with their mentor who is an experienced item writer. After review and initial editing, they are then validated by a group of the examination committee in which they are graded on importance, relevance, and criticality. If an item makes it through this tedious process, it is then placed into the item bank for use.

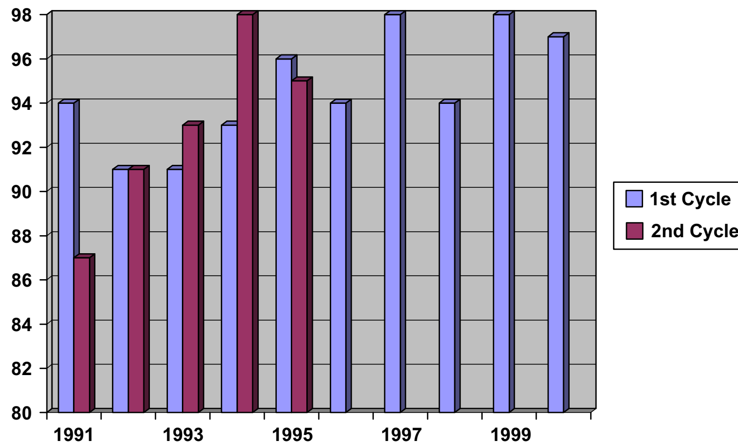

FIGURE 3. *Recertification % rates by year certified. Item performance.*

Following administration of an exam, a statistical measure of performance is evaluated on each individual item on the examination. Based on these statistics, the testing agency is able to determine the difficulty of the item, displayed as the mean or p-value, which is calculated based on the percentage of candidates who chose the correct answer (Figure 4).

Ambiguity is determined based on whether a second option which is not specified as the correct answer is chosen by an inordinate number of candidates and what is the performance level of those candidates that have chosen that answer…that is, are they the highest scoring group of candidates or a lower scoring group of candidates.

Finally, the degree of discrimination of an individual item is evaluated by point biserial, which means in a nutshell, the ability of an item to discriminate between candidates who are high performers and lower performers. This value is shown and should perform at >0.20. Each year a few items are highlighted by the testing agency for further review by the examination committee and recommendations are given to the committee as to how a "problem" item should be handled. Should it be double keyed, should it be reviewed for current practice, or does it truly passes the test of relevance and accuracy? Once an item performs with less than acceptable statistical values, it is removed from the active item bank.

The other most frequently asked question revolves around the passing score and the fact that it changes slightly each year. Questions are asked such as "are you just trying to exclude me because you are upset with me for some reason," or "are you trying to limit the number of candidates that pass each year?"

Once again, this is a process based on statistical evaluation of an exam's performance. Each year there is a core group of questions in the examination with a history of consistent performance in regards to difficulty and discrimination. Through a cross reference of the performance of new items against the core items, a level of difficulty is determined for each examination. In that manner, a candidate is not penalized for taking the examination during a year when the examination itself is slightly more difficult. With a passing score that fluctuates slightly each year based on that particular examination's difficulty, the candidate's performance is evaluated in the most fair and unbiased manner.

I believe that consistent performance of the examination itself is the true test of competency of our process. Our committee approaches the process with the utmost seriousness in our decisions, which are based on fairness and statistical relevance.

Having said that, what has been the performance of the examination over the time of its administration? Following a recent problematic administration of the examination, we challenged our testing agency to prove to us that the validity of our examination had not been compromised by the problems. At our most recent board meeting, we were presented with a group of statistical analyses of the examination's performance. Through this analysis, we found that our examination performed with a 0.90 score reliability in which the content and difficulty remain consistent within the various domains. We were comfortable with the results of that review and believe that the Hand Therapy Certification Examination is one of the most consistent performing certification processes in the health care fields.

Enough said about those processes. Let's go back to the original question…was it insight or hindsight? Are we proud of this credential because of our insight to see the need for developing the process or are we proud in hindsight based on its exemplary performance? Does it matter? We have one of the most coveted

Options	Lowest	Medium	Highest	%	N	MeanSer	Biserial
1	0.03	0.02	0.01	1.8	10	134.2	-0.16
2	0.16	0.08	0.05	9 9	54	133.4	-0.25
3**	0.63	0.80	0.85	75.8	414	143.9	0.32
4	0.19	0.09	0.09	12.5	68	134.4	-0.24
Mn Ser	121.12	143.45	161.22				
Grp N	182	194	170				

Number Cases
546
Mean (P+)
0.76
Delta
10.20
Pearson
0.23
Biserial
0.32

FIGURE 4. *Statistical analysis of an item's performance.*

credentials in the allied health care fields. It is being used as a prerequisite for hiring, it is used by third party payers as a standard of excellence in determining their contracts, and it has even been incorporated into the practice acts in various states. That has not been the intention of the Hand Therapy Certification Commission, but in comparison to where we were in the early years of our society, we can now say that the credential is an objective measure of competence, based on statistical consistency in its measure of performance. Our parent organizations have tried to develop comparable competency measures, but nothing has achieved the level of recognition and respect of the Certified Hand Therapist.

But, now let's ask…so what? The real measure of our success is whether we have made a difference in the care of our patients. Has the blending of our two professions into a higher level of specialization called hand therapy really changed outcomes for those people who come and go out of our practices every day? What do you think? You know, many of our patients are faced with that sliding door in their lives…where maybe a slight error of judgment or a minor miscalculation in timing has sent them down a pathway that has changed their lives forever and they are in our clinic for assistance in that journey. Each of us has had those special patients in our career where we know we made a difference in that journey…and they have made a difference in our journey, also. Reflect back on those people while I share with you the story of one of the most special patients I have had in my career. Ask yourself, has all of our work been worth it?

"Hi, my name is Lisa Rhinehart. In 1981, I was water skiing and fell. A drunk driver ran over me with a boat. I had a near amputation of my right dominant arm. I spent my 21st birthday in intensive care and had what some might say was a tragic beginning to adulthood. It changed the course of my life. In the hospital, through the door walks an angel. That angel was my therapist, Patti. As we worked and began all the various rehab processes, it was very interesting that Patti could hear my silent words. She knew when to encourage, when to listen, when to challenge. She knew how to appropriately talk to me through the grieving processes like denial, anger, blame…things like that. When my family weakened or their patience ran thin, I could always count on my therapist to go the distance.

As I began the discharge process, I changed hand dominance, went to college, took a few classes, and tried some odd jobs. It was very hard to find jobs I could do because as we all know waiting on nerve return can take awhile. Then, a new beginning happened. Patti opened a private practice and needed someone to work a few hours a day to do laundry. I was perfect for the job. So, I started doing laundry and things evolved. I met other therapists, and patients kept approaching me asking questions and needing encouragement, trying to justify what had happened to them. Then, Patti looked at me and said "You need to be a therapist! You have sat on both sides of the table and would be able to understand." So…that's what I did. I am now a CHT and have two hand clinics in Tulsa, Oklahoma.

All of us have impact on people's lives. We impact not only our patients, but also our families and friends. Sometimes we start on a project, not fully realizing its ultimate outcome. In hindsight, we often have the opportunity to say "yes…it was meant to be" and then we are grateful for the ride.

I want to take a moment to say thanks to Mary Kasch who has been integral in development and maintenance of our credential, and thanks to her for inviting me to join this group, and in 1987, for asking me to be the Examination Committee Chairperson. To be able to be on the ground floor of the development of such a highly esteemed profession has been an honor and a wonderful journey. I also want to recognize my other counterparts in HTCC, Lynnlee Fullenwider, Georgiann Laseter, Brenda Hilfrank, and all of the people who have served with me on the Examination Committee or as item writers.

> "If you can dream it, you can do it."
> Walt Disney

Let it never be said that these projects come to pass by the work of a few individuals. It has been said it takes a village. It certainly has taken a village to reach our dream. I want to take a moment to thank the many therapists who have been involved in our process through the years. Since 1988, more than 100 therapists have served as item writers for the examination. Over 25 people have served on the HTCC board of directors. We have totaled over 30 different therapists who have served on either the examination committee or the recertification committee. Two hand surgeons have been physician members of our board and an additional two people not involved in the profession have served as public members. I also want to thank those therapists in our audience who have not been directly involved in the process, but through the years have voiced support and demanded excellence from our work.

It has been an honor to be here today and my hope would be that you have some food for thought from my words.