Goal of this Project
To share my specific knowledge of periodization design for the sport of figure skating within the coaching community and for the fans who are interested in learning more about how coaches train their athletes.
I want to create a dialogue with coaches through the social media to show them really how easy it is to write their own plan and at the same time show my thanks to the PSA, USFS and the USOC for all they have done for me in my career by providing access to valuable resources at crucial points in my coaching development.

Involved: PSA, USFS/ISI, Icenetwork, USOC

Social Media Used: Facebook, Twitter and Instagram

Periodization concepts that will be communicated in addition to sharing specific daily plans:

1. Tudor Bompa is the father of periodization. Simply put: coaches must plan the skater’s training over time.
2. Train the skater not the short or long program.
3. Body Systems involved:
   - Brain
   - Muscles
   - Energy (Work, Fuel, Oxygen, Lactate and Heart)

Figure Skating is a sport of medium duration because the short program and long program are between 120-480 sec. This means the best way to train for our sport is in 4 sets of 5 minute intervals. So a 20 minute lesson should be active and structured this way. Figure Skaters need:
   - Speed of Movement
   - Speed Endurance
   - Power
   - Acceleration
   - Lactate Tolerance

4. Hydration is critical during all training phases.
5. In addition to on-ice workloads being structured, Nutrition and Mental Training must also be periodized.
   - A skater’s nutrition must match the workloads and can increase metabolic efficiency during training.
   - A skater’s mental preparation needs to be done before a competition. The coach can introduce sports concepts each week several months in advance to prepare the skater for competing.

6. GOAL
   - Stretch goals are required for achievement; the team is not sure what can be accomplished with the skater
   - This is the challenge of periodization and related to Johari’s Window concept.
7. TRAINING CYCLES (active rest, pre season, in season, taper, off season) are broken down into BLOCKS.

- BLOCKS can be week(s) or month(s).
- MICROCYCLES are days and weeks.
- MESOCYCLES are weeks and months.
- MACROCYCLES are over 6 months to a year or longer.

QUADRENNIAL PLAN is a 4-year macrocycle for an Olympic goal.

Coach is the architect of a periodization plan. In the early stages of the skater's career, the coach plays a larger role. This concept is called guided discovery and is controlled by the coach. Eventually, the goal is to limit coach dependency.

Must have a VISION first. Create a PLAN. COMMUNICATE the plan by telling and asking for input.

- Set specific goals. Make the maximum effort. Enjoy the training process and overall journey. Let the chips fall where they may.
- Feedback from the TEAM of support professionals around the skater is important. Must address critical issues first.
- For example, if a skater wants to learn a double axel and their air time is only .41 and they need to be .46, an action-oriented plan that is positively driven must be designed that includes both off ice and on ice goals.

8. The reason to INK WHAT YOU THINK is because WHAT GETS MEASURED GETS DONE.

In a weekly cycle, the work on each day is varied and coordinated with what off ice training is being done by the athlete. For example:

- Monday is a HARD day.
- Tuesday is a MEDIUM day.
- Wednesday is a HARD day.
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- Friday is a MEDIUM day.
- Saturday is a LIGHT/MEDIUM day.

The body must be stressed in order to adapt. If the skater does not stress the body, then the skater does not adapt. If the skater does not adapt, they become… extinct. NEVER STOP LEARNING!!!!

An athlete must step back to move forward. Think of how a person feels the first day after surgery compared to three months after surgery. This is what training is all about.

A skater cannot be overtrained if they are not in shape to begin with. The pain associated with training from “overreaching” accompanies this SUPERCOMPENSATION phase and is not “overtraining,” though the symptoms are similar.

As the volume of doing skills (jumps, spins, footwork and programs) increases, the intensity lowers. This creates an “X” curve. The meeting point of the two produces the best results in training cycles.

Guiding Principles for Creating a Plan:

- PLAY is the best form of learning.
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For all of the adult support team (coaches and parents), the focus tends to be on performance. This is not necessarily the same for the skater.

Just as in a yoga class, there are 3-4 levels of difficulty from easier to mastery. This is also the case with writing periodization plans for figure skating coaches who work with skaters of all levels.
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For example a MICROCYCLE BLOCK could look like this:

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Tuesday is a MEDIUM day.

Wednesday is a HARD day.

Thursday is a LIGHT day.

Friday is a MEDIUM day.

Saturday is a LIGHT/MEDIUM day.
In a weekly cycle, the work on each day is varied and coordinated with what off-ice training is being done by the athlete. After a hard Monday, your athlete might be complaining about feeling sore and tired. This may lead you to back off of the high volume. It is important that the high volume be done in preseason and not later in the year because once an athlete starts competing at important competitions all of their energy should be focused on peak performance. That said, it is always important to listen to your athlete and never push them to the point of injury, however, it is also important to educate them with the following information:

**RECOVERY** helps reduce muscle soreness. Recovery includes proper sleep 9.25-10 hours per night. Proper nutrition which includes constant hydration and snacking throughout the day as well as a 60/40% carb/protein meal within 30-90 minutes after the end of the training day (the earlier the better). It also means mentally relaxing and doing something fun not related to figure skating like watching their favorite TV show or movie, playing their favorite video game or app or just reading a book.

Other modalities like stretching, sauna, hot tub/cold plunge and massages are also important modalities of recovery.

**Training points the athlete should be aware of:**

- All pain is temporary. The body must be stressed in order to adapt. If the skater does not stress the body, then the skater does not adapt. If the skater does not adapt, they become...EXTINCT! No, actually they will not reach their goals.
- A skater cannot be overtrained if they are not in shape to begin with. The pain associated with training from “overreaching” accompanies this SUPERCOMPENSATION phase and is not “overtraining,” though the symptoms are similar. (Did you check out my tweet about the definition of SUPERCOMPENSATION?) Be aware overtraining can be occurring when they feel the same way later in the season.
- An athlete must step backward in order to move forward. Think of how a person feels the first day after surgery compared to three months after surgery. This is what training is all about.

Take a moment to think about what a medium day would mean. You can send me your thoughts and ideas if you want.
Training principle for Wednesday (another hard day in this Microcycle):

As the **VOLUME** of doing skills (jumps, spins, footwork and programs) increases, the **INTENSITY** of the athlete naturally lowers. This creates an “X” curve if you graph them. The meeting point produces the best results in training cycles. Keep this in mind as you have training conversations with your athlete.

Aristotle, the great Greek philosopher who was a student of Plato and teacher of Alexander the Great (384 BC-322 BC), knew this principle very well. Though that time seems so very long ago, it is not surprising the Olympic Games began with the Greek civilization. Onward to Sochi...
“Excellence is an art won by training and habituation. We do not act rightly because we have virtue or excellence, but rather we have those because we have acted rightly. We are what we repeatedly do. Excellence, then, is not an act of will but a habit.”

— Aristotle
All elite skaters usually skate everyday of the year except Thanksgiving and Christmas.

If your athlete has worked hard so far this week they can approach the day as follows:

- Skate one session and run through their skating elements (jumps, spins and footworks) and review the toe and loop combination techniques and exercises.

- Skate two sessions and do a short program on one session and review the combinations on the other.

- Skate three sessions and do a long program with single jumps, do a short program on the other session and run elements on the third session.

Lastly, when my athletes train like they are “kicking the snot” out of themselves (I love that expression from Dr. Bill Sands), I give them permission to take the day off. Some do. Some don’t. But if they choose to skate, I make sure their volume is really light and low.
As I said in my getting started video, Friday or Saturday is the day when the skaters try to bring out their weekly peak. Today the Broadmoor Skating Club offers what they call, “Fire and Ice” exhibitions. This involves a similar preparation to an actual competition. The skaters should focus on one performance of their short or long program today and try to make it as clean as possible.

One session during the day can be treated like the 20 minute warm up. On the other sessions, the skaters go through the program they are not simulating in sections.
Today is the end of the first weekly MICROCYCLE.

I wanted to add that if your club or rink does not offer weekly exhibitions, you can still purchase an additional freestyle session in order to simulate a competition experience. You can have your skaters do a 5-6 minute warm up, wear their costumes and then plan a skating order and wait time. The simulation of the performance on Friday is what makes it a medium day because it does require a lot of mental and physical strength even for them to do an exhibition.

On Saturday in most rinks ice time is limited and that is certainly true at the Colorado Springs World Arena. It makes sense that today would be a light day. It is a good day to review the key jump techniques that have been accomplished and all drills and exercises that have been performed throughout the week. If your athlete does not have a lesson scheduled for this day, then text or have a short conversation with them in between sessions.

If your skater has performed an exhibition, then make sure to set aside time and “debrief” the experience with them. Nowadays with phone and tablet technology, it is easy to film the program. If you captured what they did in a performance, then you can then compare that with what they are doing in training.

If you noticed on my first post about training cycles, Saturday can also be a medium day. If your skater is preparing for a competition and you know that they will compete on back-to-back days, you can also do an additional simulation on Saturday. This extra workload would make it a medium day.
Why write a training plan?

The reason to **INK WHAT YOU THINK** is because **WHAT GETS MEASURED GETS DONE.**

The coach is the architect of a skater’s periodization plan. In the early stages of a skater’s career, the coach plays a larger role in this area. This concept is called “guided discovery” and is controlled by the coach. Eventually, the goal is to limit this type of coach dependency but not totally remove it. Additionally, when the primary coach creates a plan, it allows all of the support coaches to function at a higher level with the athlete.

**The Coach:**

Must have a **VISION** first.

Then create **THE PLAN.**

To **COMMUNICATE** the plan, the coach must both say what needs to be done and ask for input from the athlete and everyone on the support team.

The feedback from the **TEAM** of support professionals who assist the skater is critical.

The plan must **PRIORITIZE** critical issues first.

For example, if a skater wants to learn a clean double axel and their airtime is .41 and needs to be .46, the plan that is designed should include both off-ice and on-ice goals. The plan must be action-oriented and positively driven in order for the goal to be achieved. It should include improvements in strength and power as well as key aspects of the axel technique.

Enjoy the new video, which was filmed by my daughter, Madison, and if anyone needs copies of the handouts you can find them at Club Z.
Take the MICROCYCLE CHALLENGE!

Now that you have some information, I want you to roll up your sleeves and get to work. Yes, that's right. Jump right in and start the process. Pick up a pen or start typing notes on your smartphone or tablet.

Over the next two days, I will be posting information that will help you construct your very own periodized training plan that is specific to your skaters. I am giving you this information today so that you have it available over the weekend when you will be working on your plan for the coming week (HINT!). If anyone wants to e-mail me their rough draft for input you can at tomzak1@msn.com. If you do take me up on the offer please allow me adequate time to review it since I had over 100 e-mail requests for the microcycle charts.

Here is the first post of basic information and considerations when designing micro, meso and macrocycles.

1. Make sure every decision you make about what to put into the plan is about training the skater and not just the short or long program.

   This involves assessing the following BODY SYSTEMS:
   - Brain
   - Muscles
   - Energy

   The brain and muscles are obvious. Energy systems include thinking about how your athletes WORK, how they FUEL, how efficiently they transport OXYGEN, how they tolerate LACTATE and how strong their HEART pumps blood)

2. Figure Skating is a sport of medium duration because the short program and long program are between 120-480 sec. This means the best way to train is in 4 sets of 5 minute intervals.

3. Figure Skaters need the following qualities if they are going to be successful:
   - Speed of Movement
   - Speed Endurance (Notice the specific qualities of speed)
   - Power
   - Acceleration
   - Lactate Tolerance (This is mentioned twice for a reason)

I hope this gets the juices flowing. Remember there is no such thing as a wrong idea and being able to try and fail and try again is what we preach to our skaters so be prepared to do that yourself as you plan. I can tell you that I sure did when I first started 20 years ago.
Coach Periodization:

Some fun downtime during the camp with pole expert Nick Perna and Ice Theatre choreographer and artistic director Doug Webster. Who knew the pole could be used for difficult spin variations. Great try on the 2a!

Video on Instagram at:  http://instagram.com/p/cep2cMJYzhv/
My Personal Guiding Principles for Designing a Plan:

I wrote down the following thoughts on my competition schedule during a break at the Skate St. Paul Summer Competition in 1995. I was coaching at the St. Joseph Figure Skating Club in St. Joseph, Missouri and working on my physical education degree at Missouri Western State College. I was in the process of learning about periodization and working with many developmental athletes, including Ryan Bradley, who was a juvenile boy at the time. I still read these “mantras” every year:

**PLAY** is the best form of learning.

**WORK** is not the opposite of play and can be fun.

**DEPRESSION** is the opposite of play and can mean the work is not fun.

**TRAINING** is not learning. These are separate concepts and require different designs by the coach.

I think number 3 sounds very funny. I don’t know why I chose the word “depression” because it sounds so extreme and out of context. It still makes me smile every time I reread it.
Three additional planning tips:

- It is important to remember that all of the adults (coaches who work with the skater both on and off the ice as well as both parents) who are part of the skater’s support team tend to be focused on the skater’s performance. This is not necessarily the same point of view for the skater.

- Athlete conversations and goal planning meetings are necessary to determine the goals that are the basis for the periodization plan. Though time consuming and difficult to schedule, it can be most effective if all coaches, both parents and the athlete attend these meetings. (See my Twitter @CoachTomZ for additional information.)

- Just as in a yoga class, there are 3-4 levels of difficulty from easiest to mastery for each pose. This is also the case when writing periodization plans, especially for those figure skating coaches who work with skaters at different levels from beginner to elite.
Word of the day: MYELIN

The MYELIN pathway is the lightning fast circuit from the brain to each and every muscle used in completing any type of movement. Building and stimulating this pathway is so critical for the complex skills our skaters do everyday. This pathway becomes faster with each repetition and slows down when the movements are not performed regularly, which is why so much repetition is involved in sports like figure skating that require fine motor skill movements.

The latest research shows that the pathway works both ways. It used to be thought that the origin of movement was in the brain but now it is known and has been shown that muscles can communicate back to the brain. Unbelievable! I do think we observe this phenomenon in our sport when skaters can save an off axis jump and land vertically when we and the audience thought was it impossible.

July is MYELIN month. Keep up with the high volumes of all skills: jumps, spins and skating exercises. This is the basis for periodized training.
Tapering

The most important part of a periodized plan is what is known as the taper. Simply put this means physically reducing the volume and mentally increasing the intensity so that the skater can achieve peak performance at a competition. From a physiological standpoint, the athlete should have a decrease in creatine kinase in their muscles which helps reduce fatigue.

Since skaters compete so many times throughout the year, the team must prioritize which competitions are the most important and then lay out the yearly training plan accordingly. Once you know the days your athletes will compete you must back track on the timeline and plan out their weekly training up until the event. If you coach multiple athletes you must do a specific plan for each one since no two athletes are the same.

I am a believer in training through many of the competitions. As I posted on Instagram, there is only competition and that is the Olympics. Everything the skater does leads up to that. That said, since competing helps the skater learn, grow and build confidence too many poor competitions in a row can adversely affect the skater’s mental game and this is not a good thing for the physical part of the taper.

This week has been the third week leading up to the Glacier Falls Summer Classic and the volume of reps has been greatly reduced since July 1st. In the next two weeks each of my skaters will receive specific plans to either “top up” or “top down.” I will explain this concept in detail in a later post.

Even though periodization is based on theory and can be easy to understand once you learn the terminology, it it definitely NOT a linear process and requires detailed variation. Knowing when to overreach while at the same time using constant recovery modalities is extremely important when training high level skaters that are junior level and above.

The taper is the truest test of the application of your plan and directly determines results. It requires specific knowledge. I have learned a great deal from reading publications by Inigo Mujika, who most notably has worked with the Australian swimmers in 2003-4.
QUIZ

Test your periodization knowledge with this short, fun quiz! Then have your athletes take it and see how they do. This can be a spring board for discussions about training.

1. You need a minimum of ................. to prepare and feel confident for your first major competition.
   A. 3 weeks
   B. 2 months
   C. 4 months

2. Once you begin training, your body detrains after ................. so plan your time off wisely.
   A. three days
   B. four days
   C. four skating days but not counting normal time off on the weekends
   D. you never detrain if your mind doesn’t think so.

3. Building the myelin pathway from your brain to all of your muscles requires repetitions. Once this pathway exists,
   A. constant stimulation is necessary to maintain it
   B. the more repetitions you do, the stronger and quicker the pathway becomes
   C. it never needs to be re-stimulated you are set for life
   D. a and b only
   E. a, b and c

4. The myelin path for a skill and the myelin path for your entire long program are separate pathways and stored in different parts of the brain.
   A. True
   B. False

5. Your must form a myelin pathway for expression and interpretation from your brain to the different muscles in your face.
   A. True
   B. False

6. If you want to make any kind of change in your training, for example, skating faster or getting your feet tight -- you must emphasize it ................. of the time in your mind while you are training.
   A. 95%
   B. 100%
   C. 99%
   D. 95% if you are not talented but only 50% if you are talented
7. Being tired is common when you are training so it is not an excuse to not train. List 3 things you can do to minimize this negative physical effect of training.

   A. ........................................
   B. ........................................
   C. ........................................

8. Practicing skating ..........................................., while training.............................................. contributes to your overall health as a human being... improves your fitness level as an athlete improves your fitness level as a human being... contributes to your overall health as an athlete.

   A. is fun... sucks
   B. sucks... is fun
   C. a and c
   D. b and d

9. If you improve yourself 3-5% _______, you will become an Olympian because that is what they do.

   A. most of the time
   B. at least every other week
   C. every week of your career
   D. most every week of your career

10. Once you are trained, you do not need to train to maintain your training. This is what causes overtraining.

    TRUE
    FALSE

The answers to this quiz are revealed in a video post at Coach Tom Z’s website. Watch “Periodization Video 3” at http://coachtomz.com/video/#post15 to get the answers.
Training Camps

Just like many skaters come to the Colorado Springs World Arena for weekly or monthly visits during the summer, Max Aaron and Brandon Mroz are attending the G2C Supercamp at Shattuck’s St. Mary’s.

When skaters change their training patterns as part of a periodized plan, this creates what is called “muscle confusion” and allows for even more supercompensation during a mesocycle.

At the Olympic Training Center in Colorado Springs, athletes of all sports come to do what is called a “training special.”

This is a similar concept. So try to incorporate trips like this into your skaters periodized plans at key points during the preseason. They really help during the development process.
Wrap up:

PERIODIZATION MODEL FOR FIGURE SKATING, By Tom Zakrajsek

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Involved: PSA, USFS/ISI and Icenetwork; possibly USOC?

Social Media Used: Facebook and Twitter and possibly Instagram?

Timeframe
The entire month of July. This is typically the most intense training month for elite figure skaters who are “in season.” During 2013, the “Olympic Push” is in full swing. My athletes will be preparing for Glacier Falls competition the first week of August so this timeframe will also show a tapered workload.

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I hope this information has been helpful. I appreciate all of the feedback. Thank you to the 120K people from 45 different countries all over the world who checked out my page. Best wishes for a great season!

Remember to help your skaters:

Set specific goals.
Make the maximum effort.
Enjoy the training process and overall journey.
Let the chips fall where they may.

Tom