# Music revels the secrets to team flow state

As musicians and music teachers, we would all be familiar with the feeling of team flow. It is that moment when you are playing in an ensemble, usually during a performance, and everything seems to come together and the music you produce collectively is far beyond what the group has ever achieved before.

There may also be feelings of chills down your spine or your hairs on your neck and arms standing on end. Ultimately, it is the state that we constantly chase for our students to experience.

I remember one such moment recently with my senior concert band. In the lead-up rehearsal to a concert we could play sections of the piece very well, but when we tried to run it through it always fell apart somewhere. All it took was one tentative entry or someone pushing the tempo and it all fell over. We went into the performance being unsure what would happen.

As their conductor I could sense their heightened state while they sat in front of me, ready to play. We began and, in one of the most memorable and special music education moments I have experienced, the band nailed the performance. As they walked off stage I was congratulating them. The student musicians were collectively wide-eyed and a bit shocked, “did that really just happen” many of them asked.

I put this experience down to what I had experienced before, one of those spine chilling memorable music education moments. However, as I read through this new research paper, that experience took on new meaning.

## Team/ensemble flow state is unique in the brain

> “Research suggests that medium-sized teams of around 5–10 individuals tend to accomplish complex tasks better and have higher coordination and cohesion in the cases of most businesses, medical surgical teams, sports teams, and musical ensembles.”
>
> Tunçgenç, B., Travers, E., & Fairhurst, M. T. (2021). Leadership and tempo perturbation affect coordination in medium-sized groups. *Scientific reports*.
>
> Bigger Better Brains

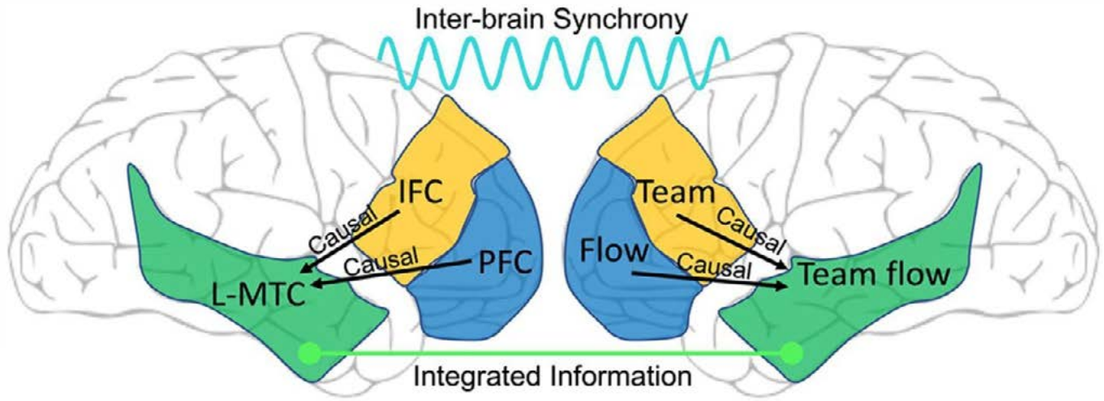
In October 2021, the father of flow state, Mihaly Csikszentmihalyi, sadly passed away. Flow state is the mental state in which a person performing some activity is fully immersed in a feeling of energized focus, full involvement and enjoyment of the process of the activity. It is also called the zone or specific to musical activities, it is sometimes called being in the groove.

You can imagine that measuring flow state is not very easy. People who experience flow state can report it after the experience but rarely can spot it just before it happens.

You are just suddenly in it. Flow state has been described by musicians from many genres as that state which we continue to chase as we perform in different places, with different preparations, people and expectations.

However, we have found where the flow state lives in the brain. Take a look at the diagram. You can see on the right hemisphere there is a blue area that says flow. This is where that flow state lives.






Excerpt from Shehata, M. et al. (2021). Team Flow Is a Unique Brain State Associated with Enhanced Information Integration and Interbrain Synchrony

Now let’s look at teamwork. You can see in the same diagram that when we work together as a team, and that could be a sport, an art performance in a group or a physical challenge, the area in yellow lights up. The question the researchers had was what did the team flow state look like in the brain.

Here is how they defined team flow. “Team flow occurs when a group functions in a high task engagement to achieve a goal, commonly seen in performance and sports. Team flow can enable enhanced positive experiences, as compared with individual flow or regular socializing.” (p.3) Their findings were unexpected. They thought they would see greater interaction between the flow (blue) and team (yellow) areas. But what they discovered is that when team flow occurred an entirely new section of the brain was activated – the team flow area highlighted in green.

> Bigger Better Brains
>
> Coordinating our actions with others in contexts such as a musical ensemble has an obvious positive consequence: it increases everybody’s chances of accomplishing the joint goal.
>
> Tunçgenç, B., Travers, E., & Fairhurst, M. T. (2021). Leadership and tempo perturbation affect coordination in medium-sized groups. *Scientific reports*.

This new activation indicated that there was an integration of the flow and team information, and this indicated inter-brain synchronicity.

Inter-brain synchrony reflects synchronous brain activity between two participants from a dyad (something that consists of two elements or parts). To estimate the inter-brain synchrony between two players, we calculated the phase-locking value.

## How did music enable this discovery?

While this new team flow discovery could have been aided by studying team sport, it turns out that it came from studying music-making through “Guitar Hero” on iPad. The participants responded to the rhythm-based cues in songs in three different conditions and found that team flow occurred when they played the Guitar Hero in-game format as partners.

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Music listening and music learning have served as an incredible tool to understand a myriad of different aspects of human development. Music has helped us understand the mechanisms behind how we learn to speak and read language, where language disorders originate in the brain, the importance of rhythm within the brain, how beat can reactivate the motor cortex for Parkinson's sufferers and even how to diagnose a concussion.

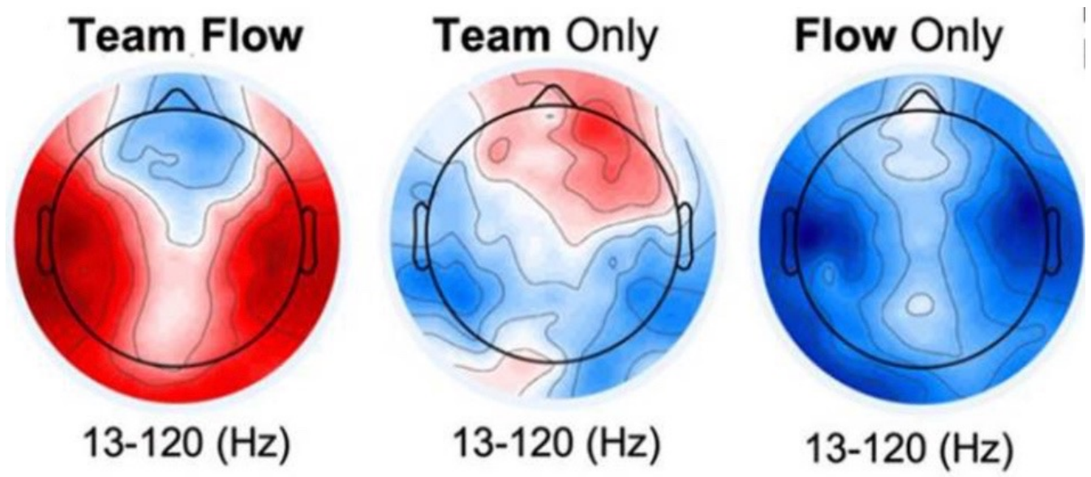
This is because the auditory processing network is the largest and most complex sensory processing network in the brain and can be seen as the master sense when it comes to the processing of sensory information.

**Team Flow is not just in sport**

While the word team is immediately synonymous with sport, humans learn as a team all the time. The researchers point out that "Group activities can enhance this synchrony during intense social states, body or speech coordination, music production, dancing, student-teacher interactions in classrooms, touch-mediated pain reduction, creativity in cooperative tasks, and even in socially interacting bats." (p.27)

Music learning in an ensemble is a powerful way to experience team flow. A typical year of music learning in an ensemble may include 4-8 performances, one of which is where team flow may strike. They could have weekly or daily rehearsals, again another opportunity for team flow. But quite differently to sport, student musicians often stay together in the same ensemble for multiple years, and this may increase the likelihood and frequency of experiencing a team flow state.

Looking at the below representation of flow, team and team flow in the brain, we can see that there is greater neural intensity in the team flow state. This could very well point to the impact experience team flow could have on a student's motivation levels and their desire to contribute at their highest levels to a collective goal. Such a formative and impactful experience in childhood could well set those students up to contribute and expect higher levels of team involvement in their workplaces and their families.

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So next time you are speaking to a parent about balancing sport and music commitments or experience an attitude from school leadership that explicitly or implicitly holds the teamwork development of sport above music, this research may come in handy. Music learning could deliver team flow experiences more frequently and effectively than sport, and this could well contribute in a more powerful way to the students' future teamwork skills.

**Read More**

**Shehata**, M., Cheng, M., Leung, A., Tsuchiya, N., Wu, D. A., Tseng, C. H., ... & Shimojo, S. (2021). Team Flow Is a Unique Brain State Associated with Enhanced Information Integration and Interbrain Synchrony. *Eneuro*, 8(5).

**Researcher to Follow**

**Associate Professor Mohammad Shehata**

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## Professional Reflection • Part 1

### Personal Brain Buzz

Do you have a memory of a team flow experience in music? Can you describe what happened in the moment of team flow for you and three possible factors in the lead up to the team flow experience that you believe made it occur.

Remember sometimes adversity or the imperfect preparation can contribute to the team flow experience.

### Experiment Time

After writing down your experience of any factors leading to team flow, ask a colleague or friend if they have every experienced team flow, what their experience was like and what may have led to their experience.

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## Professional Reflection • Part 2

### Personal Brain Buzz

Ask your students about their flow or team flow experience in any activity. First define flow and team flow for them and then ask them to describe the experience they had and one factor that may have led to the experience of flow or team flow.

Remember, some students may not have had this experience yet so it is important to remind them that flow or team flow will most likely be an experience sometime in their lives, but they may not have had it yet.



### Experiment Time

Take note or an audio record for your own use of your students responses. Compare their responses to your own or that of your colleague of friend. What was similar, different or surprising?

### Questioning Brain Buzz

After completing this professional reflection, write at least two questions you have about this topic.