

Riding the Flow: An Interview Study on Flow in Skateboarding Competitions

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1 **Abstract**

2 Optimal psychological states, such as flow and clutch, are critical for peak performance in sports. While
3 the Integrated Model of Flow and Clutch States in Sport (Swann et al., 2017a) provides a framework for
4 understanding these states, its applicability across diverse sports contexts, including technical
5 compositional sports like skateboarding, remains underexplored. Therefore, this study aimed to explore
6 the factors that precede a flow state, the characteristics experienced during flow, and post-flow
7 experiences in the context of skateboarding contests. Event-focused interviews were conducted with
8 four female and four male skateboarders ($M_{\text{age}} = 25.3$; $SD = 6.1$), as close as possible after excellent
9 competitive performance ($M = 6$ days later; $SD = 3.4$). Data were interpreted using reflexive content
10 analysis. Skateboarders discussed factors preceding their flow states, including feeling comfortable,
11 managing thoughts and emotions, preparation and enjoyment, and landing tricks. In addition,
12 skateboarders emphasized that flow was characterized by effortless attention, optimal arousal levels,
13 and an immersive experience. Participants reported post-flow experiences of euphoria, satisfaction, and
14 a paradoxical combination of physical exhaustion and mental refreshment. This study contributes to the
15 broader understanding of flow by highlighting how supportive competitive environments, including
16 familiarity and positive social interactions, may foster psychological readiness and create conditions
17 conducive to flow. Future research should explore optimal psychological states across other technical
18 sports and consider within-subject designs to examine variations in performers' experiences.
19 *Keywords:* peak performance, optimal experience, sport psychology, positive psychology

20 **Riding the Flow: An Interview Study on Flow in Skateboarding Competitions**

21 Sport provides an ideal environment to explore optimal human functioning, as athletes strive for
22 excellence, especially in competitive settings (Jackson & Kimiecik, 2008). One of the most widely studied
23 psychological states underlying excellent performance in this context is flow (Csikszentmihalyi, 2002).
24 Flow can be described as an intrinsically rewarding and harmonious psychological state, characterized by
25 complete concentration and absorption in an activity (Swann et al., 2021). In addition, flow has been
26 associated with exceptional performance (Jackman et al., 2021) and positive subjective experiences
27 (Swann et al., 2012). Flow is traditionally understood through a nine-dimensional framework, which
28 includes three conditions (challenge-skill balance, clear goals, and unambiguous feedback) and six core
29 characteristics (action-awareness merging, sense of control, focused concentration, time distortion, and
30 autotelic experience) (Nakamura & Csikszentmihalyi, 2002). Reviews in sport and exercise psychology
31 (e.g., Goddard et al., 2023; Jackman et al., 2019, 2021) indicate that this framework has been the most-
32 commonly applied conceptualization of flow in these settings.

33 Despite extensive research on flow's traditional conceptualization, questions remain regarding
34 its conceptual clarity and empirical robustness. For instance, flow dimensions have been argued to lack
35 precise definition (e.g., Swann et al., 2015), with overlap between dimensions and potentially relevant
36 aspects not explicitly captured within the framework (e.g., Swann et al., 2012). In addition, there is
37 limited and inconsistent empirical support for certain dimensions (e.g., Swann et al., 2012). For example,
38 Swann et al. (2012) suggested that these characteristics are not universally experienced, with fewer than
39 30% of athletes in qualitative studies reporting loss of self-consciousness or time transformation (Swann
40 et al., 2012). Additionally, Hassmén et al. (2016) highlighted a lack of consensus on how many
41 dimensions must be present to classify a flow state. Although Swann et al. (2012) identified 12
42 facilitators of flow in elite sports (e.g., effective preparation, positive emotions, optimal situational

43 conditions), flow research has been criticized for focusing on associations rather than causal
44 explanations (e.g., Swann et al., 2015, 2017).

45 In response to these limitations, alternative perspectives on psychological states underlying
46 excellent performance have emerged in recent years. One such perspective is captured in the Integrated
47 Model of Flow and Clutch States (IMFCS; Swann et al., 2017a). Based on event-focused interviews,
48 Swann et al. (2016, 2017a) proposed that a second state, “clutch”, can also underpin excellent
49 performance. Clutch states are conceptualized as psychological states underlying clutch performance
50 (e.g., Schweickle et al., 2022), defined as any improvement or superior performance under pressure
51 (Otten, 2009), and involve sustained pressure appraisal and performance maintenance throughout an
52 event (e.g., Swann et al., 2017b). While flow and clutch states share elements such as enjoyment,
53 confidence, perceived control, and absorption, they differ in their experiential qualities. Flow is typically
54 characterized by effortless attention and optimal arousal, whereas clutch states involve deliberate focus,
55 intense effort, and heightened arousal (Swann et al., 2016, 2017a, 2017b). Although the IMFCS (Swann
56 et al., 2017a) aligns with propositions in other models (e.g., automatic and controlled performances;
57 Bortoli et al., 2012), it remains at a relatively early stage of empirical development and requires further
58 development (Jackman et al., 2025). In particular, research has highlighted the need to examine
59 psychological states across different sports, performance environments, and levels of expertise (Swann
60 et al., 2016). Such work is important to develop sport-specific understanding of psychological states
61 underlying excellent performance.

62 One sport in which psychological states underlying excellent performance remain underexplored
63 is skateboarding. Skateboarding offers a unique performance context due to its technical and
64 compositional nature and its relatively unstructured, self-directed, and minimally regulated
65 environment. Compared to more traditional and regulated sports, skateboarding involves fewer
66 formalized training structures, less hierarchical oversight, and greater autonomy in practice. These

67 characteristics may shape distinct psychological experiences during performance. This environment is
68 also associated with self-directed and experiential learning processes (Collins et al., 2022), which are
69 linked to flow (Csikszentmihalyi, 2002). Moreover, skateboarding emphasizes "challenge-skill balance"
70 as athletes continuously adjust the difficulty of tricks relative to their skill level, particularly in
71 competitive settings (e.g., Jackson & Marsh, 1996). Despite these features suggesting that skateboarding
72 may be a particularly relevant context for studying flow and related states, empirical research in this
73 domain remains limited.

74 Therefore, the present study aimed to explore flow experiences in skateboarding competitions
75 using event-focused interviews (Jackman et al., 2022). Specifically, the study aimed to: i) Explore factors
76 perceived to promote flow states during skateboard contests, ii) Examine the characteristics of flow
77 states experienced by skateboarders, and iii) Identify the outcomes related to the experience of flow in
78 skateboarding. Accordingly, the study addressed three research questions: 1) What factors preceding a
79 flow state in skateboarding contests?, 2) How are flow states experienced by skateboarders?, and 3)
80 what outcomes are associated with the experience of flow in skateboarding? By investigating these
81 questions, the research aimed to examine the IMFCS framework within the context of skateboarding
82 and provide new insights into how flow contributes to performance, motivation, and overall well-being
83 (Goddard et al., 2023). These findings have the potential to inform both applied practice and future
84 research on psychological states underlying excellent performance across diverse sports environments.

85 **Method**

86 **Research Philosophy**

87 This study was guided by a critical realist perspective, which assumes that an external reality
88 exists independently of human perception, while recognizing that our understanding of that reality is
89 always mediated through social, cultural, and interpretative processes. We assume that experiences
90 such as flow may reflect real psychological phenomena, while also acknowledging that participants'

91 accounts of these experiences are shaped by interpretation and context. Accordingly, this study aimed
92 to explore the occurrence and experience of flow in skateboarding competitions, by attending to both
93 recurring patterns across accounts and the subjective meanings participants attached to their
94 experiences. Semi-structured interviews were used to gather rich, descriptive data, which were analyzed
95 using reflexive content analysis.

96 **Reflexivity Statement**

97 Consistent with our epistemological position, we engaged in reflexive practice by considering
98 how our own experiences and assumptions might have influenced the analysis, the claims made, and
99 the conclusions drawn. I [author 1] am a German male master's student with over 12 years of
100 skateboarding experience and two years of coaching the sport. I have received training in interviewing
101 through SportPsychMapping and currently provide competition analysis support to the German national
102 skateboarding team. Although I have competed in other sports like soccer, I have not participated in
103 skateboarding competitions. My extensive experience and cultural immersion in skateboarding provided
104 contextual insight during interviews and contributed to the interpretation of the data. I [author 2] am a
105 female sport and exercise psychologist and lecturer based in the UK. I have worked in a variety of team
106 and individual sports but have no experience in skateboarding. This outsider perspective contributed to
107 the later stages of analysis, bringing a degree of analytical distance and supporting the refinement of
108 categories. I [author 3] am a female sport and exercise psychologist and academic based in the UK. I
109 have worked in a variety of team and individual sports but have no experience in skateboarding. I have
110 experience researching flow, clutch, and athletic performance. I [author 4] am a German male research
111 assistant with limited skateboarding experience, having engaged in the sport recreationally for about a
112 year during my childhood. My distance from the skateboarding culture offered a more neutral
113 perspective during team discussions.

114 **Participants**

115 A total of eight skateboarders (four women, four men) participated in this interview study, with
116 an average age of 25.3 years (range = 18–35, $SD = 6.1$). They had an average of 10.7 years of
117 skateboarding experience (range = 3.5–23, $SD = 7.0$) and an average of 6.4 years of experience
118 competing in contests (range = 0–19, $SD = 6.8$). All participants indicated that they experienced flow
119 during recent competitions when approached for interviews. As shown in **Table 1**, six participants
120 specialized in the street discipline, while two were in the park discipline. Their contest levels ranged
121 from international to local, with half competing locally. Park involves performing tricks in a custom-
122 designed skatepark with bowls, ramps, and transitions, while street focuses on skating in environments
123 that mimic urban settings with obstacles like stairs, rails, and ledges. Competitive formats included run
124 ($n = 5$), best trick ($n = 1$), and heat run ($n = 2$), with one participant competing in two formats. In
125 skateboarding, a “run” involves a timed performance with a series of tricks on the course, a “heat run”
126 features skateboarders performing in groups (heats), and a “best trick” format focuses on individual
127 tricks.

128 The inclusion criteria were: (1) regular skateboarding, (2) age over 14 years, (3) participation in a
129 contest within the past 14 days, and (4) fluency in German or English. Exclusion criteria included being
130 under the influence of alcohol during the interview and any circumstances that might compromise
131 participants’ ability to provide informed consent or participate safely in the interview. These measures
132 were implemented to ensure the mental and emotional safety of participants during the interview
133 process. Adapting criteria for excellent performance used in previous research on psychological states
134 underlying excellent performance (Swann et al., 2017), participants were selected based on criteria such
135 as contest placements (1st place, $n = 1$; 2nd place, $n = 4$; 3rd place, $n = 1$), peer recognition ($n = 2$), and
136 the first author’s judgement ($n = 5$), with behavioral indicators including confident body language (e.g.,
137 Swann et al., 2015a). The first author attended and observed the events and approached potential

138 participants to invite them to take part in the study. For those not accessible during the contest ($n = 2$),
 139 contact was made post-event via social media accounts.

140 **Table 1**

141 *Participant Demographics*

Pseudonym	Sex	Age	Contest level	Contest discipline	Contest format	Days since contest
Amelia	female	24	local	street	run	10
Blythe	female	19	national	park	heat run	7
Bruno	male	18	regional	street	run	10
Elliott	female	32	local	park	heat run	4
Ethan	male	28	regional	street	run, best trick	2
Sebastian	male	35	international	street	run	3
Willow	female	21	local	street	run	3
Zephyr	female	25	local	street	run	9

142 **Procedures**

143 Ethical approval for this study was obtained from the ethics committee at [blinded university],
 144 ensuring that all procedures adhered to established ethical guidelines. Participants were provided with
 145 an information sheet and consent form prior to participation. The first author also ensured that
 146 participants understood the purpose of the study, their rights, and how their data would be used. The
 147 interviews were conducted by the first author shortly after participants had competed in events. To
 148 accommodate participants' availability and ensure interviews were scheduled as close to the event as
 149 possible, a flexible approach was adopted, resulting in an average interval of six days between the
 150 competition and the interview (range = 2–10 days; $SD = 3.4$). Three interviews were conducted face-to-
 151 face, three via the online platform BigBlueButton, and two over the phone. On average, the interviews

152 lasted 49.5 minutes (range = 30–64 minutes; *SD* = 12.7). Seven interviews were conducted in German,
153 and one in English.

154 **Interview Guide**

155 This study employed a semi-structured interview guide with an open-ended approach, allowing
156 interviewees to elaborate on areas they deemed important. Specific probing questions were integrated
157 to extract deeper insights (Smith et al., 2014). The interview guide was tailored to align with the
158 research questions. After introductory questions (e.g., “How did you get into contest skateboarding?”),
159 participants were asked to discuss their experiences with flow. If they were unfamiliar with the concept,
160 a definition was provided: “Flow is a psychological state characterized by complete absorption in an
161 activity, a sense of control, and a feeling that everything is aligning, even under pressure. Flow is often
162 marked by enjoyment, increased motivation, self-confidence, and an altered perception of the activity”
163 (adapted from Swann et al., 2017a). Participants provided examples of flow in skateboarding, explained
164 why they considered them optimal, and indicated if they used a different term before discussing flow
165 during their recent competition. All participants identified an experience they understood as flow and
166 were then invited to describe their performance chronologically, including when the state emerged and
167 how long it lasted (Swann et al., 2016). To explore flow states, questions about emotional experiences
168 (e.g., “How did that make you feel?”) and thought processes (e.g., “What were you thinking?”) were
169 asked. Probing questions (e.g., “How would you describe your state of arousal?”) helped distinguish
170 between flow and clutch experiences, following the IMFCS (Swann et al., 2017a). They were encouraged
171 to use their own terminology, fostering authentic responses and rich data (Braun & Clarke, 2022). To
172 investigate flow, participants were asked about the pre-flow phase and factors contributing to its onset,
173 aligned with the three dimensions of the knowledge map in sport and exercise psychology (Latinjak et
174 al., 2021): “What external circumstances aided in the occurrence?”, “Which of your personal
175 characteristics aided in the occurrence?”, and “What have you done to facilitate entry into the flow?”.

176 To further differentiate between flow and clutch occurrence, probing questions such as “What goals did
177 you have during your performance?” were utilized based on the IMFCS (Swann et al., 2017a). The guide
178 was reviewed and revised by the third author for clarity and relevance, with adjustments including
179 rephrasing questions for better participant comprehension (e.g., using “bodily activation” instead of
180 “arousal level”), removing irrelevant questions (e.g., those about past training breaks), and adding a
181 definition of flow at the start. The guide was then translated into English and piloted with a participant
182 who met the inclusion criteria, resulting in minor adjustments. After the first two interviews, the
183 significance of the first trick in a run emerged, leading to the addition of a related question: “What role
184 does the first trick of your run play?”.

185 **Content Analysis**

186 The recordings were transcribed verbatim. We engaged in a reflexive content analysis
187 (Nicmanis, 2024) to answer the following research questions: What factors preceding a flow state in
188 skateboarding contests? How are flow states experienced by skateboarders? What outcomes are
189 associated with the experience of flow in skateboarding? Drawing on the IMFCS, an abductive analysis
190 was employed. Before data analysis, all identifiable information was removed by the first author, and
191 participants were assigned pseudonyms. Pseudonyms were generated with the assistance of ChatGPT
192 based on the interviewer’s general impressions of participants (e.g., broad personality characteristics),
193 without sharing any interview data or identifiable information with the tool. Two researchers conducted
194 the data analysis, following the key principles of reflexive content analysis (Nicmanis, 2024), including
195 becoming familiar with the data (stage 2), coding (stage 3), revising codes (stage 4), developing the
196 analysis structure (into categories) (stage 5), reporting the analysis structure (stage 6), refining, and
197 interpreting the findings (stage 7). Once familiar with the data, the first author developed an initial set
198 of codes and categories, based on a combination of the raw data and existing research on flow (e.g.,
199 Swann et al., 2012; Swann et al., 2017a). During the analysis, the last author contributed to the

200 refinement of codes and categories and revisited the data during later stages of the analysis to ensure
201 alignment between interpretations and the dataset. For instance, initial categories such as "adrenaline"
202 and "optimal arousal" were combined into a broader category labeled "optimal arousal levels." Another
203 key decision during this collaborative process was to exclude insights related to "clutch" experiences.
204 Although two participants discussed clutch moments, this insight was not sufficiently prevalent across
205 the dataset, and it was deemed more appropriate to focus more specifically on flow. Following these
206 discussions, the second author reviewed the revised categories, leading to the addition of subcategories
207 to further structure the analysis and refine the connection between the data and theoretical
208 frameworks. Quotes from German interviews were translated into English for inclusion in the results
209 section. The first author used DeepL, a high-quality machine translation tool, and the translations were
210 verified by the last author for accuracy. The transcripts were then sent to participants for verification,
211 with six out of eight confirming accuracy; two participants did not respond.

212 **Rigor**

213 Investigator triangulation was conducted by the first and last authors, involving reviewing
214 interpretations, challenging assumptions, and ensuring a balanced understanding of the data. The
215 second author, acting as a critical friend, reviewed the content presented by the first and last authors
216 and raised critical questions, leading to follow-up discussions. This process resulted in renaming
217 categories to more accurately describe the content and experiences shared by participants. Further,
218 throughout the reflexive process of this analysis, we engaged in questioning our own understanding of
219 the data and reflecting on cases that did not align with previous research, ensuring a more
220 comprehensive and nuanced interpretation of the findings.

221 **Results**

222 Flow states were reported by all interviewees. Consistent with our research aims, the findings
223 are presented in three sections: Psychological and environmental factors preceding a flow state;

224 characteristics of flow experienced in skateboarding events; and experiences following flow.
225 Descriptions of skateboarding maneuvers mentioned in the results are provided in the supplementary
226 material. The results are organized according to the main categories reflecting our research questions.
227 Within each category, subcategories (headings) provide more detailed divisions, and the narrative text
228 illustrates these with specific concepts, or codes, which are italicized. Table 2 summarizes the
229 categories, subcategories, and codes to provide a clear overview of the findings.

230 *** Table 2 about here ***

231 **Factors Preceding a Flow State**

232 Factors preceding a flow state included feeling comfortable in the competitive environment,
233 managing thoughts and emotions, preparation and enjoyment, as well as landing tricks and increasing
234 challenge.

235 ***Feeling Comfortable in the Competitive Environment***

236 Before the skateboarders reached a flow state, they often described a *feeling of comfort* and
237 *environmental familiarity*, creating a foundation for entering flow. For example, Sebastian mentioned
238 that, having frequently participated in competitions, he did not consider the number of people around
239 him: "I don't even think about whether there are 100 people next to me or 5000. It makes no
240 difference." Amelia, a seasoned competitor, shared a similar sentiment when responding to the
241 question "What else played a role when you got into the flow?":

242 [...] I've already had some contest experience and know what it's like to have to ride alone in
243 front of all those people, so to speak. Then, of course, that I know the park really well and just
244 feel comfortable there.

245 Several skateboarders highlighted the role of the social environment in shaping comfort and
246 enjoyment during competitions, making it a *positive atmosphere*. While the presence of many
247 spectators could feel intimidating, it was also perceived as enjoyable and motivating, Blythe explained:

248 “[...] but then also the feeling that so many people are watching you. Which is kind of scary on the one
249 hand, but also nice on the other, that so many people want to see what you do.” Comfort was also
250 influenced by friends, supportive competitors, and the contest organization team. For example, Amelia
251 described how encouragement from a friend immediately before a run boosted motivation and
252 happiness, while Elliott noted the positive impact of having friends nearby, even under the gaze of
253 spectators: “[...] good feeling when your friends are in close proximity although all eyes are on you.” The
254 broader atmosphere of the event was similarly important, with participants describing friendly,
255 welcoming interactions and a contagious sense of positivity: “[...] I also thought the overall atmosphere
256 at the skate park was good. Of course, I met a few people and they were all nice, everyone was in a good
257 mood. And I think it's also a bit contagious.” (Ethan).

258 Together, these examples suggest that comfort in the competitive environment arises from
259 familiarity with the contest, positive social interactions, and a supportive, welcoming atmosphere. This
260 comfort lays the groundwork for entering flow, highlighting the crucial role of both environmental and
261 social factors in facilitating optimal performance.

262 ***Cognitive and Emotional Regulation***

263 For many, the absence of *critical thoughts and emotions*, such as anxiety and self-doubt, were
264 discussed as relevant to experiencing flow. Several participants reported that reduced worry, including
265 about potential injuries, allowed them to feel more at ease and fully engage with their performance.

266 Ethan reflected:

267 Maybe [I] also [had] generally on the day [...] less anxiety things. So maybe there are days when
268 you're more worried, ah, I might hurt myself there. If I go for the trick, I could twist my ankle.
269 [...] I hardly have such things on such a [flow] day.

270 Others described intentionally shutting off their minds to minimize self-consciousness, which
271 helped them ignore spectators and external pressures. Conversely, some skateboarders reported

272 *nervousness* before entering a flow state. Zephyr, for example, shared: "I'm always incredibly nervous,
273 until things get going and then I manage to get by reasonably well." On the other hand, some
274 participants shared a relaxed perspective, like Elliott:

275 I didn't have the type of tension before the start like in other contests before. [...] usually,
276 there's a bit of trembling, increased pulse when you look at the motor skills, hands a bit, the
277 heart beats, but this time it was actually [...] different [...].

278 Even when participants felt comfortable in the environment, some still experienced *uncertainty*
279 about successfully landing tricks. Despite the absence of critical thoughts experienced by some
280 skateboarders, many used psychological skills to cope with pre-performance stress and nervousness. For
281 instance, Bruno described dipping his face into cold water or using *breathing techniques* to calm herself
282 before performing, while others highlighted the value of self-talk to reinforce confidence and
283 concentration: "Then take a deep breath and just ride," or "[...] a few breathing exercises, long
284 exhalations, short inhalations, that sort of thing." (Willow). *Imagery* and *self-talk strategies* were also
285 applied, with Blythe explaining:

286 I go through my run again, where I ride, roughly thinking about what tricks I want to do, and go
287 through all of them in my head. [...] it's also a good tactic to practice a bit and to think about
288 how to string the tricks together, just doing thought experiments.

289 Participants, such as Willow, also reported *cognitive distraction techniques* to reduce stress prior to
290 competition:

291 Well, I had to turn away from the skate park a bit because it stressed me out at some point
292 when I knew it was almost time [...]. We actually had a frisbee with us and then we went a bit
293 further back to the meadow and then we played a bit of frisbee for 15 minutes, back and forth,
294 and then I really didn't have any thoughts about the contest.

295 These examples suggest that cognitive and emotional regulation, through reduced critical
296 thoughts or the use of strategies such as breathing, self-talk, imagery, or distraction, may help
297 skateboarders manage stress and perform effectively. In turn, this appears to create conditions that
298 facilitate, rather than directly cause, flow.

299 ***Preparation and Enjoyment***

300 Preparation strategies were perceived to influence flow onset and varied amongst the skaters.
301 Some participants described entering competitions with a clear plan. For instance, Amelia explained
302 how she structured and rehearsed her run in advance:

303 I have already planned out this run beforehand, what tricks I do when. I've also practiced it in
304 the week before, timing it to see how much fits into a minute. I've even stopped it beforehand
305 and practiced the entire run, which, of course, gave me confidence.

306 At the same time, participants emphasized the importance of remaining flexible during
307 performance. Rather than rigidly following a pre-planned sequence, skateboarders described adapting
308 their runs to the immediate context. Zephyr reflected on this *flexibility*, stating:

309 Sometimes it felt like I only decided what I was going to do a second beforehand. [...] So, it was
310 actually very spontaneous. [...] For example, the finger flip, [...] I sort of set off from the left half
311 of the quarter and whenever I set off from there, I actually practiced it [...]. Otherwise, I don't
312 really ride there.

313 This flexible approach was often accompanied by in-the-moment adjustments and emerging
314 ideas during the run. As Willow described, new ideas could arise spontaneously while performing. In
315 addition to planning and flexibility, participants highlighted the importance of enjoyment and reduced
316 pressure. For instance, Blythe noted that focusing less on outcomes, such as making the podium, and
317 instead approaching the contest similarly to casual skateboarding helped her performance.

318 Overall, these findings suggest that preparation for flow in skateboarding involves a balance
319 between structured planning and adaptability, with an emphasis on enjoyment and openness during
320 performance.

321 ***Landing Tricks and Increasing Challenge***

322 Achieving or perceiving *progress toward a goal*, such as successfully performing and increasing
323 the difficulty of tricks, was linked to skateboarders' experience of flow states. Many participants
324 reported that landing initial tricks boosted confidence and facilitated immersion. For instance, Blythe
325 noted that completing a line during warm-up increased her readiness and reduced the need for further
326 practice, while Ethan described a rush of focus and full immersion after executing the first trick of a run.
327 Similarly, Willow explained that successfully landing a trick *increased confidence*, creating a sense that
328 subsequent maneuvers would also succeed:

329 For me, it was simply clear that I wanted to do the [...] 180 over the hip. [...] And when I landed
330 it, I was like, [...] now I can definitely do it. If I can do this trick, then I can do the other things
331 too.

332 Skateboarders reported feeling more confident, rewarded, and at ease after landing tricks,
333 reflecting *enhanced reward and enjoyment*. Several participants noted that initial successes helped
334 reduce tension and facilitated entry into flow. Once confidence was established, many challenged
335 themselves with progressively more difficult maneuvers, illustrating how they *transitioned to more*
336 *challenging tricks*. For example, Elliott illustrated this process, describing a sequence of increasingly
337 complex tricks:

338 And then I thought, okay, now you can start and try something more difficult. Probably started
339 with a nose pick, which then worked out [...]. Then I did a kickflip body varial rock to fakie. I felt
340 comfortable so far. Yeah, and then I got on the ramp and then I thought to myself, yeah, now
341 I'm going to ride into the bowl and try a blunt kickflip body varial rock on the other side.

342 For some skaters, flow emerged after completing a few tricks, particularly a challenging one
343 with personal significance. Blythe explained that everything went well after landing a trick she had really
344 wanted to do. The tricks were typically well-practiced and within the skater's skill range, often involving
345 lower risk. Ethan elaborated on his choice of initial tricks to gain control and contribute to his flow state:

346 From experience, I've realized that I don't like to do a flip trick as my first trick because my legs
347 are sometimes a bit soft from excitement. [...] so, I decided to try the first tricks with less
348 rotation [...], where the board is on your feet the whole time, for example a boardslide, a lipslide
349 or a 180.

350 Overall, these accounts suggest that successfully landing tricks provides confidence and a sense
351 of reward, which appears to facilitate entry into flow. At the same time, progressively increasing
352 challenge seems to be part of the ongoing process, as skateboarders continue to balance skill, risk, and
353 enjoyment during their runs.

354 **Characteristics of Flow in Skateboarding Events**

355 Flow characteristics reported by participants to contribute to their experience of flow during
356 competitions included optimal arousal levels, effortless attention, a deep sense of immersion, and
357 confidence.

358 ***Optimal Arousal Levels***

359 According to several skateboarders, *low arousal levels* were experienced during their flow
360 states, which were characterized by a marked absence of physical stress and heightened relaxation.
361 When asked how her body felt, Willow described feeling calm, relaxed, and not stressed. Similarly,
362 Amelia reflected on her experience, noting that she felt surprisingly relaxed:

363 I know from other contests that I usually get really shaky legs or something like that, and then
364 suddenly everything feels different, or I hear a rushing sound in my ears, or I feel myself

365 blushing or something. None of that happened this time. Strangely enough, I was really deeply
366 relaxed.

367 This suggests that low arousal is perceived as an unexpected experience because it is not
368 typically associated with competition. On the contrary, skateboarders experienced *heightened arousal*
369 *levels* during their runs. For example, Blythe highlighted the omnipresence of adrenaline during her heat
370 run:

371 I get a lot of adrenaline when I skate [...]. From speed. From the feeling of happiness when you
372 land a trick [...]. So, every time you ride, you have adrenaline because you're going so fast. And
373 [...] because it's still dangerous.

374 Taken together, these accounts suggest that flow in skateboarding is experienced across a range
375 of arousal levels. Participants described both low arousal, marked by calm focus and relaxation, and high
376 arousal, characterized by adrenaline and excitement. This indicates that flow can involve different
377 subjective states rather than a single, uniform physiological experience.

378 ***Effortless Attention***

379 Most skateboarders described their attention as effortless, reflected by a sense of automaticity
380 in their actions. For instance, Zephyr explained: "I don't have to put in any extra work to concentrate."
381 Bruno further described an efficient coordination between body and mind, stating that he felt
382 concentrated but allowed his body to take over: "I felt concentrated but I let my body do the work. [...]
383 So, I would think of the trick. OK, my body knows what to do. I've repeated the trick many times."
384 Furthermore, participants commonly reported heightened attention and *effortless automaticity* during
385 flow, where their mental focus occurred naturally with minimal or *reduced conscious effort*. Many
386 skateboarders noted a strong *sense of control*, reflected in precision and responsiveness in their tricks
387 and a sense of mastery beyond the norm. Bruno described this perceived control by stating:

388 A lot more control than usual when I was in the flow states. I could feel like the board was
389 speaking to my feet at every pop, every trick I could feel the board sticking to my feet and being
390 responsive to my movements on the legs.

391 All skateboarders described their actions as unfolding naturally and seamlessly. For instance,
392 Willow described the experience as effortless, saying it felt natural and unforced, with her body
393 instinctively guiding her to perform the next trick: "It just came naturally, so my body told me, yes, do
394 the frontside shove-it now, and then I just did it like that." Bruno highlighted the smooth sequencing of
395 tricks, exemplifying effortless automaticity: "[...] allowing your body to take over your algorithm. [...] let
396 your body do the work. All you have to do is tell it. Ok, I need to do frontside. OK, right after that I need
397 to do kick turn and now, I have to go to my 50-50 on the on the box.

398 Together, these accounts suggest that a defining feature of flow in skateboarding is effortless
399 attention, where concentration, motor control, and decision-making operate seamlessly and with
400 minimal conscious effort, allowing actions to unfold naturally and precisely.

401 ***An Immersive Experience***

402 Skateboarders commonly reported flow states as a *state of immersion* characterized by *deep*
403 *absorption* and altered perceptions. Many described being so absorbed in the activity that external
404 stimuli, such as music or other people, faded from awareness. For example, Willow described not
405 noticing the environment around her, while Elliot explained feeling isolated, as if everything around him
406 had disappeared, leaving him with tunnel vision. Several participants noted a similar sense of time
407 distortion, describing the experience as happening in a rush, leaving few memories beyond the act of
408 riding, and in some cases requiring video playback to recall specific tricks. For some, it also involved a
409 sense of rush and an altered sense of time, described with terms such as "great void" (Zephyr),
410 "symbiosis" (Elliott), "peace/Zen" (Bruno), and "being in a movie" (Blythe).

411 Some skateboarders experienced anticipations of positive outcomes during their flow states. For
412 example, Ethan was able to anticipate and successfully perform a complex trick in a best trick format
413 with open-ended tries, expressing confidence that he would land the trick based on past experience.
414 Similarly, Elliott described having a sense that a particular attempt would succeed, noting that it felt
415 different from the two previous failed attempts, though he was hesitant to call it instinctive.

416 These accounts indicate that flow in skateboarding is marked by *deep absorption*, a *state of*
417 *immersion*, altered perception, and heightened anticipation, allowing athletes to focus entirely on the
418 present moment and perform with both precision and adaptability.

419 **Confidence**

420 Once skateboarders entered the flow state, they often experienced *enhanced confidence*, a
421 sense of *composure*, and feelings of strength and *capability*. Several participants, including Blythe, noted
422 that this confidence was sustained throughout their runs: “[...] your confidence actually lasted the whole
423 run [...]. It's definitely a state where you feel pretty powerful because you feel like you can do so many
424 things.” Flow was also associated with the *anticipation of positive outcomes*, as skateboarders felt
425 capable of executing planned or spontaneously chosen maneuvers successfully. Similarly, Amelia
426 reflected on the attention she received, feeling a sense of pride in showing her friends and others that
427 she could accomplish something.

428 These accounts suggest that flow in skateboarding is characterized by a sustained sense of
429 confidence, supporting both performance and self-efficacy, and enabling skateboarders to fully engage
430 with the activity.

431 **Outcomes Following Flow**

432 Many skateboarders reported intense *sense of enjoyment*, *feelings of satisfaction* and *euphoria*
433 following their flow states. Participants commonly described a strong sense of satisfaction and *pride* in

434 their performance, often feeling completely absorbed in the moment. For instance, Amelia expressed
435 her astonishment, noting that she was completely amazed and had not expected to land all her tricks.
436 Similarly, Blythe noted that after the run, all her feelings of happiness came together, and she felt
437 unbelievably happy. The skateboarders also expressed satisfaction and pride in their performance.
438 Willow, for example, shared that it felt like a great moment, and she felt truly happy and proud of
439 herself. Rather than allowing feelings of euphoria in the moment, Blythe mentioned suppressing
440 overwhelming feelings of happiness during the performance:

441 [...] it was such a rush of happiness after the run because you suppress everything a bit during
442 the run... 'but now I have to concentrate on the other things first. I don't have time to be so
443 happy right now.'

444 Flow experiences often led to *feeling energized*, characterized by heightened energy levels, a
445 sense of *enhanced vitality*, and a *state of readiness*. For example, Amelia reported feeling a surge of
446 energy after her flow state experience and expressed eagerness to continue performing:

447 [...] I had a lot of energy [...]. [...] and then [...] the moderator had asked me [...] whether I
448 wanted to continue with my second run straight away, or whether we needed another practice
449 or something [...]. Then it was clear to me that I didn't need practice again [...]. I'll stay in this
450 flow now [...].

451 Skateboarders, such as Blythe, mentioned a combination of *mental rejuvenation* and *physical*
452 *fatigue*, feeling mentally refreshed yet physically exhausted after their performances. The overall
453 experience of flow was often described as intensely rewarding, transforming the competition into a
454 memorable and exhilarating event.

455 These findings suggest that flow produces a combination of positive affect, pride, and energizing
456 effects, reinforcing motivation and engagement while leaving participants mentally refreshed and

457 emotionally satisfied, highlighting the profound personal and performance-related benefits of achieving
458 flow in skateboarding.

459 **Discussion**

460 This study sought to explore the factors preceding a flow state, characteristics of the flow state,
461 and post-flow experience in skateboarding competitions. The findings highlight a sense of comfort and
462 familiarity with the competitive environment that was supported by positive social interactions and
463 reduced cognitive and emotional interference. Once in a flow state, skateboarders described a sense of
464 effortless attention, heightened focus, an immersive experience, and confidence. These experiences
465 were accompanied by varying levels of arousal, ranging from calm focus to adrenaline-driven activation,
466 alongside a sense of coordination between body and mind that allowed for precise and automatic skill
467 execution. Following flow, participants reported intense emotional responses, including feelings of
468 euphoria, satisfaction, and pride, as well as feelings of increased energy, mental refreshment, and
469 motivation to continue performing.

470 The results largely align with the IMFCS (Swann et al., 2017a). In particular, the importance of
471 familiarity and comfort with the environment supports previous research highlighting the role of optimal
472 conditions in facilitating flow (Swann et al., 2015b; Polomäki et al., 2021). While the present study also
473 emphasized elements such as uncertainty, exploration, and experimentation prior to performance,
474 these appeared to coexist with favorable performance states. This supports findings suggesting that
475 nervousness and uncertainty do not necessarily preclude flow experiences (Swann et al., 2017a).
476 Overall, the variability in pre-performance experiences underscores the subjective and context-
477 dependent nature of flow and its onset (Jackman et al., 2017).

478 The process outlined in the IMFCS, which includes positive events, positive feedback, confidence
479 building, challenge appraisal, and the setting of open goals, was partially supported by our findings.
480 Similar to the sequence of occurrence outlined in the IMFCS, participants described how flow often

481 emerged after landing a significant trick, which served as a positive event, leading to positive feedback
482 and subsequent increases in confidence. While prior work has highlighted the potential role of flexible,
483 non-specific goals in facilitating flow (Jackman et al., 2021), our findings primarily reflect elements of
484 spontaneity and adaptability during performance. Skateboarders described adjusting their actions in the
485 moment and progressing through their runs in a flexible manner, rather than explicitly reporting the use
486 of non-specific or open goals. While some skateboarders reported feeling nervous or anxious prior to
487 performance, they appeared able to shift into a more favorable mental state before entering flow.
488 Strategies such as self-talk were described as helpful in this transition, potentially contributing to
489 increased confidence and positive feedback, which are known to support the emergence of flow
490 (Jackson, 1992, 1995; Swann et al., 2017a). This aligns with the notion that flow can emerge early in
491 performance and help build momentum and confidence (Swann et al., 2016).

492 The characteristics of flow reported by participants were consistent with prior research,
493 including factors such as effortless attention, positive feedback, absence of critical thoughts, optimal
494 arousal, automatic/effortless experience, perceived control, altered perceptions, absorption, and
495 confidence (e.g., Swann et al., 2017a). Participants described a state in which attention operated with
496 minimal conscious effort, while still maintaining awareness and control. Arousal levels varied across
497 individuals, ranging from calm focus to heightened excitement, further supporting the notion that flow
498 is not associated with a single, uniform physiological state. These findings highlight the multidimensional
499 and individualized nature of flow experiences.

500 Regarding outcomes, participants reported strong emotional and motivational effects following
501 flow experiences. These included feelings of euphoria, satisfaction, and pride, as well as increased
502 energy and a desire to continue performing. These findings align with previous research suggesting that
503 flow is associated with intrinsic reward and revitalization (Swann et al., 2017a, 2018). Notably,
504 enjoyment and motivation were more often reflected upon retrospectively, rather than being explicitly

505 described during the flow experience itself, suggesting that certain affective outcomes may become
506 more salient after performance.

507 **Limitations**

508 Although the study provided new insights, there are several limitations. No follow-up interviews
509 were conducted to gain further insights. Additionally, the study did not address the inhibition (Jackson,
510 1995) or maintenance of flow states (Chavez, 2008), although the data provided some indications for
511 recommended application. Furthermore, it should be noted that these results are specific to
512 competitive skateboarding, and it is uncertain whether they can be applied to other technical
513 compositional sports or expertise levels (e.g., Swann et al., 2016). On the other hand, the results are
514 based on a diverse sample of skateboarders, including individuals of different ages, genders, skill levels,
515 and experience. Providing participants with a definition of flow if they were unfamiliar with it may have
516 acted as a primer, which should be considered in future studies (e.g., Swann et al., 2012). A more in-
517 depth engagement with participants could have provided richer insights. For example, it remains unclear
518 whether psychological skills directly contributed to achieving a flow state, and some reported
519 outcomes—such as confidence or performance success—may reflect the outcomes of performance
520 itself, rather than flow, and should be interpreted with caution. A more open-ended approach that
521 focuses on athletes' subjective experiences, personal meanings, and context-specific interpretations of
522 performance states, along with findings on clutch states, could offer a richer understanding of flow and
523 further broaden our comprehension of flow in skateboarding (e.g., Latinjak et al., 2021).

524 **Future Research**

525 A further study applying a similar approach to another technical compositional sport, such as
526 gymnastics, would be useful to determine if the results, especially, no-novelty, social support, and
527 sudden onsets of flow, differ from the IMFCS due to variations in sport type, context, or research team.
528 A follow-up study on skateboarding competitions, specifically investigating both flow and clutch states

529 while closely examining the roles of novelty and familiarity, would be valuable in complementing these
530 findings. Moreover, the utilization of competitions was a deliberate methodological choice. Research
531 should be applied to other important contexts within the skateboarding world, such as filming video
532 parts in urban terrain, also known as street skating (e.g. possible clutch moments in high-risk situations)
533 (e.g., Batuev & Robinson, 2017). A within-subject design in which the same skateboarders describe
534 different psychological states underlying excellent performance using event-focused approaches could
535 help explain variations in flow experiences (spectrum of arousal) and provide more detailed insights into
536 responses to pressure situations (heightened arousal before clutch states). The connection between
537 psychological states underlying excellent performance and the high potential for psychological skill
538 training in skateboarding (Collins et al., 2022) highlights opportunities to investigate strategies for
539 promoting flow, including experimental designs that target the processes underlying its occurrence
540 (Jackman et al., 2021).

541 **Practical Implications**

542 Familiarity with the competition environment may support conditions conducive to flow (e.g.,
543 Swann et al., 2012), and positive social interactions—such as encouragement from peers and coaches—
544 appear to contribute to an atmosphere that can promote psychological readiness. While participants in
545 our study reported using self-regulation strategies (e.g., goal-directed self-talk) to manage pre-
546 performance states such as anxiety, these techniques should be considered carefully. Their cognitive
547 demands may not align with the characteristics of flow and require further investigation (Birrer et al.,
548 2020). Rather than assuming a direct pathway to flow, applied approaches might focus on creating
549 conditions that support athletes' psychological and emotional readiness. For instance, process-oriented
550 goal setting (Williamson et al., 2022) and simulated training environments that mimic competitive
551 pressure may help athletes develop skills that enable, but do not guarantee, flow experiences.
552 Additionally, successfully executing an initial, controllable trick may boost confidence early in

553 performance (Swann et al., 2017a), potentially supporting a favorable mental state. Finally, recognizing
554 the emotional and physical demands associated with flow experiences, incorporating recovery protocols
555 may help safeguard athlete well-being and long-term performance.

556 **Conclusion**

557 This research supports the IMFCS (Swann et al., 2017a) by providing insights specific to the
558 technical and compositional nature of skateboarding. This study highlights the under-researched area of
559 competitive skateboarding (Glenney, 2023) and aligns with previous research, showing that comfort
560 with the environment, positive feedback, and heightened confidence facilitate flow. Skateboarders
561 experienced flow as effortless attention, heightened focus, and immersion, accompanied by varying
562 levels of arousal. Following flow, participants reported feelings of euphoria, satisfaction, pride, and
563 increased energy despite physical exhaustion. The findings suggest that psychological skills may play a
564 supportive role in how skateboarders manage their experiences and potentially facilitate the emergence
565 of flow states by improving both performance and psychological state. Further research is needed to
566 examine psychological states underlying excellent performance across diverse skateboarding contexts
567 and to clarify the role of prior experience and novelty in shaping flow.

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694 **Table 2**
695 *Flow Experience Among Skateboarders*

Codes	Subcategories	Categories
Feeling of comfort Environmental familiarity Positive atmosphere	Feeling comfortable in the competitive environment	Factors preceding a flow state
Absence of critical thoughts and emotions Nervousness and uncertainty Use of breathing techniques Self-talk strategies Use of imagery Cognitive distraction techniques	Cognitive and emotional regulation	
Planning the run Enjoyment Flexibility during performance	Preparation and enjoyment	
Progression toward goals Increasing confidence Enhanced reward and enjoyment Transitioning to more challenging tricks	Landing tricks and increasing challenge	
Low arousal levels Heightened arousal levels	Optimal arousal levels	Characteristics of flow
Effortless automaticity Reduced conscious effort Perceived control	Effortless attention	
State of immersion Deep absorption	An immersive experience	
Anticipations of positive outcome Enhanced confidence Composure Sense of capability	Confidence	
Sense of enjoyment Feeling of satisfaction Experience of euphoria Sense of pride Feeling energized Enhanced vitality State of readiness Mental rejuvenation Physical fatigue		Outcomes following flow

696