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Assessing the Effectiveness of Online Sports Professional Development on Faculty Perceptions of Online Teaching Readiness and Confidence

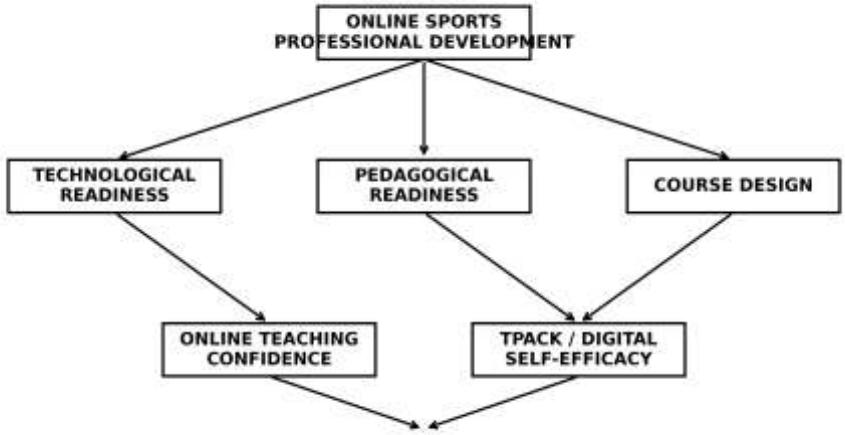
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ABSTRACT: Given the growing number of sport science, physical education, coaching, exercise science, sports management, and related programmes being offered in blended, hybrid, and fully online formats, online sports professional development has become increasingly significant. Online teaching in sport fields has unique requirements as faculty must combine demonstrations, analysis of performance, practical assessment, movement in the learning process, group activities, and the use of the media related to the sport disciple into the online learning environment. This paper is a systematic evidence synthesis of faculty perceptions of online teaching readiness and self-efficacy for online teaching, and it examines the effectiveness of online professional development. Systematic reviews, empirical faculty research, professional-development assessments, and higher-education studies were all a source of evidence. A recent survey of the readiness of university teachers to teach online reported the mean scores as 3.3/5 for readiness, 2.9/5 for TPACK self-efficacy and 2.6/5 for institutional support, with online teaching experience related to readiness. The study included 104 online faculty, and found that faculty with 20 or more hours of professional development, online teaching or learning experience, or peer review had higher online teaching self-efficacy and course-design implementation. In a study of an Online Pedagogy Program, 300 faculty members reported that they felt more prepared and confident as a result of the program. Based on systematic reviews, effective online professional learning activities include: practical learning activities, learner support, relevance, flexibility, engagement, feedback, collaboration, and application. From the synthesis, it is concluded that there is a need for technological competence to be combined with pedagogy, assessment, course design, social presence, and the practice of the disciplines for professional development to be effective. The video analysis, virtual demonstration, digital assessment, adaptation of practical tasks, student engagement and authentic performance evidence are additional points that need more attention for sports faculty. The paper suggests a framework that establishes a relationship between technological readiness, pedagogical readiness, TPACK self-efficacy, course Design ability, peer support, institutional support, and online teaching self-confidence, which is based on evidence

1. INTRODUCTION

The conceptual framework places online sports professional development as the main institutional intervention, and links it to technological readiness, pedagogical readiness, course design capabilities, online teaching confidence, and TPACK/digital self-efficacy. The framework takes the position that faculty readiness is multi-dimensional. Having technical skills does not make one ready, and pedagogical knowledge without digital skills does not guarantee effective provision of online learning. Technology and pedagogy are transformed into actual teaching practice in the context of course design. Confidence is defined as a person's self-perceived ability to engage in online teaching activities, while TPACK self-efficacy is the person's confidence in how competent they are in the integration of technology, content and pedagogy.



2. INTRODUCTION

The growth of online and blended higher education has impacted the job requirements of university faculty. Digital learning environments are not just for emergency remote learning! GM learning management systems, video platforms, digital assessment, simulation technology, learning analytics, mobile learning apps and asynchronous collaboration are already known components of the higher education delivery. These are even more complicated in the context of sport science and related fields, as the format of sports instruction involves the theoretical aspect, as well as demonstration, observation, movement analysis, development of practical skills, communication skills of the coach, evaluation and feedback. It is crucial, therefore, that faculty build technological knowledge while at the same time keeping the authenticity of the discipline and quality of the pedagogy intact.

Online teaching readiness is defined as faculty's knowledge, skills, attitudes, confidence, and contextual resources in planning and delivering effective online teaching. Being ready is not the same as being computer literate. The factors identified in a contextual faculty-readiness study (N=210) were technology access and skills, course design, online pedagogy, attitude, and institutional support. Faculty reported low levels of technology proficiency, and found that there were some technical problems in the context of their courses, which needed institutional support for pedagogically-enhanced online courses. The distinction was fundamental between access to the basics of technology and full instructional readiness.

Trust is closely related to readiness as online teaching is a repetitive process of decisions in the areas of instructional design, technology, student engagement, assessment, communication, and problem solving. A study of university teachers that took place in 2025 recruited 69 participants, with 60 of them filling out the surveys. The mean scores on the five-point scale were 3.3 for readiness for online teaching, 2.9 for TPACK self-efficacy, and 2.6 for institutional support. The experience of online teaching was a significant predictor of TPACK self-efficacy and readiness was positively correlated with TPACK self-efficacy. The findings suggest that professional development needs to be based on both knowledge and hands on experience.

Professional development is one of the most important institutional processes to improve these capacities. The results of a systematic review of online professional development programs showed positive processes in content knowledge, pedagogical

content knowledge, beliefs, self-efficacy and instructional practice. Learner support, practical learning activities, relevance, flexibility, engagement, application and attention to learner differences were all effective design features. A higher-education systematic review of online teacher professional development also stressed that not viewing professional development as a singular technical training, but as a multi-dimensional process (Bragg et al., 2021; Godsk and Nielsen, 2024).

In the sports environment, other needs are added. A sport scientist may need to record and annotate movement demonstrations, conduct video based skill assessment, develop practical tasks for students to work through asynchronously, guide students in peer analysis of movement, utilize performance data and deliver feedback using digital media. The tactical analysis can be covered using video and collaborative annotation by a coaching lecturer. A physical education teacher can use physical demonstrations and turn them into safe, accessible and assessable online activities. The sports management lecturer can create case-based simulations, digital project management, data dashboards, and collaborative business tasks. This is not platform orientation, but pedagogical integration that is required for these applications.

The main research question is if online sport professional development improves faculty perceptions of readiness and faculty confidence. The importance of faculty perceptions lies in their potential impact on factors, such as willingness to adopt online practices, persistence with technology-supported pedagogy, and engagement in continuing professional learning. Perceptions need to be triangulated with course design evidence, peer review, observed teaching, and student outcomes, while self-efficacy can be different from what is demonstrated. Confidence is therefore acknowledged as a key outcome of the present synthesis, and there is a separation between perceived readiness and measured teaching quality.

The paper examines the effectiveness of online professional development, highlights the elements of increased faculty readiness and confidence, reviews published numerical data, and draws implications for sports higher education. The analysis is based on published evidence, not made-up primary observations. Sample sizes, readiness scores, professional-development exposure and evidence coverage are summarized numerically in tables and figures.

3. LITERATURE REVIEW

3.1 Online Teaching Readiness in Higher Education

The concept of online teaching readiness has been moving towards a multidimensional construct. By using a three-level readiness profile, Sherer, Howard, Tondeur and Siddiq found high, low, and inconsistent levels of readiness profiles and attributed this to prior experience and preparation. Faculty may be technically adept but not confident with online pedagogy, or may be comfortable with online communication, but not know how to design a course. Professional development, then, must focus on the instructional process, not an individual software package (Scherer et al., 2021).

A contextual readiness research revealed five major factors: technology access and skills, course design, online pedagogy, attitude, and institutional support. Institutional support is crucial because reliable infrastructure and support to explain instructional design, as well as technical help and institutional policies that contribute to increased workload without also providing time for development, cannot be replaced by faculty training. Professional development needs to be enbedded in an institutional support system.

3.2 Faculty Self-Efficacy and TPACK

The TPACK framework offers a useful theoretical foundation for online sports professional development as there is a need for integration of technological knowledge, pedagogical knowledge, and disciplinary content knowledge in effective online teaching. TPACK moves professional development from software instruction to inquiring about the impact of technology on the representation of content, the organization of learning activities and the assessment of achievement. This integration is especially applicable for faculty in sports as knowledge in sports is sometimes either physical or performance-based, which requires demonstration, observation, and feedback (Mujallid, 2021).

This study presents quantitative evidence of the relationship between experience, self-efficacy, and readiness for the 2025 university-teacher study. The teaching experience gained online significantly predicted TPACK self-efficacy with a B value of 0.12, and a p value of 0.015. Teachers that sought pedagogical advice from others had higher self-efficacy scores. The results suggest that self-efficacy is built by key experiences of mastery and social learning, which highlights the significance of real-world practice and interpersonal engagement in professional learning (Verstraeten et al., 2025).

3.3 Online Professional Development

Bragg, Walsh and Heyeres have authored a review of 11 studies that assessed formal online professional-development programmes. There were eight quantitative studies and three mixed methods studies. The review found areas of improvement in content knowledge, pedagogical content knowledge, beliefs, self-efficacy and instructional practice. Learner support, flexibility, practical activities, engagement, relevance, application and consideration of learner differences were important design considerations. The review also found methodological limitations in the existing evidence, highlighting the need for more robust evaluation designs (Bragg et al., 2021).

Godsk and Nielsen scrubbed 661 records and added 57 studies that involved teacher professional development online for digital competencies in higher education. The review illustrates the extent of evidence and highlights factors that affect the effectiveness of professional development. In the literature, it has been found that the use of digital professional learning is most effective when technology is linked to discipline-specific pedagogy, real classroom practice, collaboration, feedback and institutional support.

Between 2013 and 2023, 82 studies were identified that examined teacher online professional learning. They were synthesized, and it was identified that there is growing but on-going gaps in online professional learning and at tertiary level and in global south contexts. In the conceptualization of the review, online professional learning was considered to be a dynamic ecosystem that is influenced by technological, institutional, policy and individual dimensions. The result reinforces a model of programme beyond attendance, and a measure of transfer to real teaching (Wang and Hu, 2025).

3.4 Faculty Development Evaluations

After 300 faculty members in an Online Pedagogy Program at a community college, Forman evaluated the program. Evaluation was conducted using the Faculty Readiness to Teach Online instrument, TPACK, an end of course evaluation and semi structured interviews. The results focused on the sense of readiness and confidence. The student experience of the programme enhanced their awareness of inclusive online-course design and community building. There were three important programme areas identified: technology integration, learning outcomes, and community building (Forman, 2023).

He analyzed 104 online faculty, and found a link between faculty who have received at least 20 hours of professional development, some online teaching experience, or faculty who have participated in peer review of an online course to having higher online teaching self-efficacy and self-reported use of effective online course design practices. The results indicate that the perceived capability is positively related to the amount of professional-development exposure and to the actual amount of course-design practice. The evidence is correlational and not considered to represent a universal threshold of causality (McMahon, 2021).

3.5 Online Professional Development and Teaching Practice

Professional development is more likely to have an impact on practice if it is related to actual teacher activities. A lesson program which shows a function of a learning-management-system without enlisting the faculty to redesign a lesson can generate technical familiarity without pedagogical transfer. Professional development that asks faculty to develop an online module, develop an assessment rubric, record a demonstration, moderate a discussion, or provide a peer review provides a direct link between professional development and practice.

Professional development through technology also enables community based learning opportunities. This study applied a three-day technology-mediated professional development programme for English-medium instruction (EMI) faculty, which combined technology and pedagogical design, and provided ample opportunities for collaboration among English faculty members as well as for participants to reflect on their faculty self-efficacy and pedagogical practice. It is considered applicable to sports education, as sports teaching not only involves individual technical ability, but also requires professional judgement in collaboration (Lin and Tsou, 2025).

3.6 Online Professional Development in Sports Education

Learning in sports higher education is often more than just lectures, with students learning through physical performance, demonstration, observation, tactical analysis, biomechanics, exercise testing, coaching communication and practical assessment. The translation of embodied knowledge to digital representations therefore should be discussed in online professional

development. Mechanisms for this translation include video demonstration, slow motion analysis, annotated movement sequences, interactive diagrams, virtual case studies, wearable-data interpretation, digital portfolios, and asynchronous performance feedback.

There is not a question of whether a sport activity is capable of being transferred online, it is a question of how. The question is, can the learning outcome be represented, practised, assessed and supported online without compromising academic standards? Professional development needs to therefore incorporate elements of learning-outcome alignment, authentic assessment, accessibility, digital safety, copyright and media use, feedback design and student engagement. As training focuses on full instructional tasks instead of platform functions, faculty confidence will be enhanced.

4. METHODOLOGY

4.1 Research Design

The effectiveness of online professional development was evaluated using a structured evidence-synthesis design with faculty perceptions of their readiness and confidence in online teaching. The selection of the design was made because there are systematic reviews, surveys, programme evaluations, dissertations and empirical studies with various instruments and outcomes available in the literature. Because measures of readiness, self-efficacy, professional-development exposure, and confidence are not generally standardized across studies, a new pooled effect size was not calculated.

4.2 Search Strategy

Evidence search was limited to areas of online professional development, faculty development, online teaching readiness, online teaching confidence, self-efficacy, TPACK, higher education, digital pedagogy, online course design, and sport education. Systematic reviews and peer-reviewed empirical studies, higher-education faculty research, and first-hand assessments of online professional-development programmes were given priority. Evidence that had been published between 2021 and 2026 were highlighted, and some of the basics studies were included if they had provided key theoretical or empirical insights.

4.3 Inclusion and Exclusion Criteria

Studies were included when they assessed readiness, confidence, self-efficacy, or course-design ability in faculty or teachers who engaged with higher education in the area of online teaching; and when studies reported outcomes for faculty or teacher professional learning, course outcomes, or outcomes for professional learning relevant to online teaching. When online professional learning was a main theme, systematic reviews were included. No studies were included in the quantitative synthesis that did not have the student readiness as a specific focus. Those items were kept in the school-teacher studies only when there was a direct connection to the design principles of professional development in teachers for higher education. Research which could not be tied to a particular online professional development or online teaching study was excluded.

4.4 Analytical Framework

Five outcome domains were identified: Technological readiness, Pedagogical readiness, Capability in course design, Online teaching confidence, and TPACK or digital self-efficacy. The contextual variables were previous online teaching experience, PD exposure, peer review, institutional support and pedagogical advice networks. Four forms of professional development were highlighted: (1) practical application, (2) technology-pedagogy integration, (3) peer support, and (4) institutional support.

4.5 Quantitative Treatment

Numerical values that were published were transcribed into the book without the creation of new study level outcomes. Where available, means and standard deviations were calculated. Associations that were identified in primary studies were presented as associations, and not translated into causality. The numbers in the results are then a second synthesis of published evidence and not observations made by the authors or an original intervention data set.

4.6 Research Integrity

There was no recruitment of human participants in the present synthesis. Secondary sources were only published studies. Studies of programme evaluations and dissertations were kept in their natural study context. The numerical tables are not representative of simulated faculty data. This is to avoid the use of secondary evidence as if it were new empirical observations.

5. RESULTS AND ANALYSIS

5.1 Evidence Profile

The evidence selected shows a link between participation in online professional development and increased faculty readiness, confidence, self-efficacy, and online course-design capability, with evidence strength dependent on study design. Bragg et al. conducted a review of 11 studies and found that there were positive results for knowledge, beliefs, self-efficacy, and instructional practice. Godsk and Nielsen reviewed 661 records and added 57 studies that centered on higher-education online teacher professional development for digital competencies. Wang and Hu reviewed 82 studies of teacher online professional learning. These are review level findings that have shown an increasing evidence base, but also revealed methodological and contextual gaps.

Table 1. Selected quantitative evidence relevant to online professional development effectiveness

Evidence source	Sample / scope	Numerical finding	Interpretation
Verstraeten et al. (2025)	69 recruited; 60 completed	Readiness 3.3/5; TPACK 2.9/5; support 2.6/5	Moderate readiness with lower self-efficacy and support
Verstraeten et al. (2025)	Faculty survey	Online teaching experience: B=0.12, p=0.015	Experience associated with TPACK self-efficacy
McMahon (2021)	104 online faculty	≥20 h professional development associated with higher self-efficacy and course-design implementation	Professional-development exposure associated with capability
Forman (2023)	300 faculty completed programme	Perceived readiness and confidence improved	Programme evaluation evidence
Chaharbashloo et al. (2024)	Systematic review	57? No; multilevel synthesis of online teaching competencies	Competency framework
Godsk & Nielsen	661 screened; 57 included	57 higher-education oTPD studies	Digital-competency evidence base
Wang & Hu (2025)	82 studies	82 online professional-learning studies, 2013–2023	Broad evidence synthesis
Bragg et al. (2021)	11 studies	8 quantitative; 3 mixed methods	Focused OPD effectiveness evidence

Bragg et al. (2021) 11 studies 8 quantitative; 3 mixed methods Focused OPD effectiveness evidence

The numbers illustrate three patterns. Ready is a measurable state, and it's not the highest point on the faculty survey, so it is not on the level that it is in 2025. Second, the McMahon study finds that when exposure is 20 hours or more, there is a higher correlation between exposure and the levels of self-efficacy and course design implementation. Third, programme assessments with large groups of faculty members can detect a sense of readiness and confidence, however, more rigorous causal designs are required to pick out training effects and to separate effects from previous experience, self-selection, etc.

5.2 Faculty Readiness and Confidence

A helpful numerical indicator is the 2025 faculty survey. The average scores for readiness for online teaching was 3.3/5, TPACK self-efficacy was 2.9/5, and institutional support was 2.6/5. Readiness was therefore higher than both self-efficacy and institutional support, however, the three were still below the maximum. Moderate perceived capability, yet uncertainty continues

about technology-pedagogy integration and institutional conditions, with this pattern, is seen as moderate, with continuing uncertainty about technology-pedagogy integration and institutional conditions (Verstraeten et al., 2025).

The study showed that one of the significant predictors of TPACK self-efficacy was online teaching experience. B = 0.12 and p = 0.015 for online teaching experience. These findings suggest that experience with the actual teaching of technology can be a factor in the development of integrated technological and pedagogical confidence. Online teaching can offer mastery experiences, feedback, trouble shooting and insight into student behaviour in online environments as long as it is repeated.

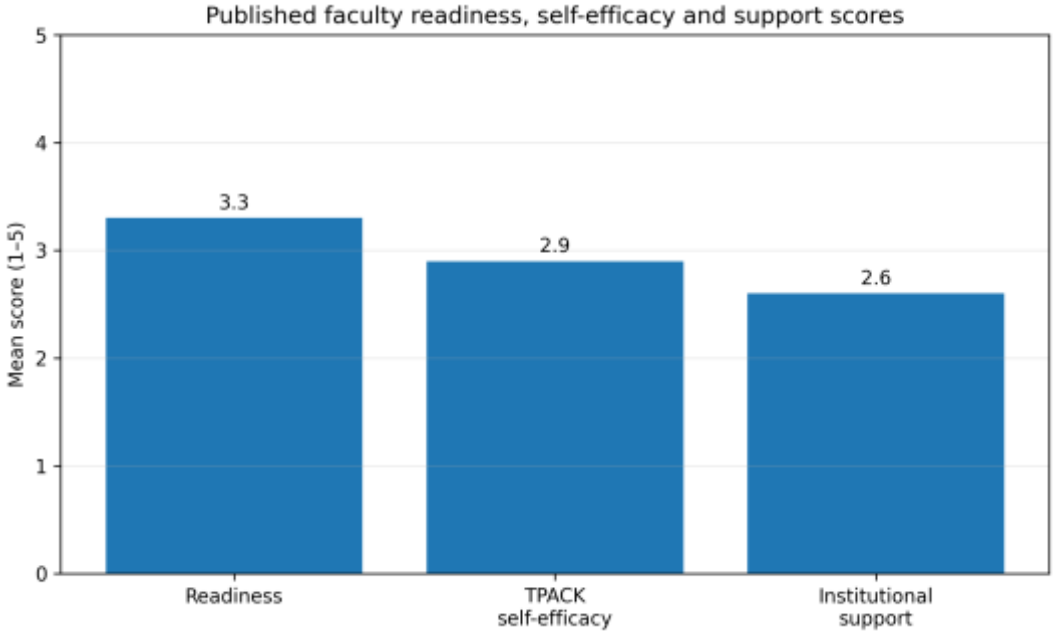


Figure 2. Published mean scores for readiness, TPACK self-efficacy and institutional support in the 2025 university-teacher survey.

5.3 Professional-Development Exposure

The report of faculty who completed these online professional development courses was that those who completed 20+ hours of professional development reported greater online teaching self-efficacy and more effective online course-design practices. Other factors associated with higher outcomes were being an online instructor or learner and involvement in peer review. The evidence is also indicative of significant and work-related professional development, as opposed to orientation for compliance (McMahon, 2021).

Twenty hours is not a standard causal threshold. The study was non-experimental and faculty with greater training might have had varying motivations, institutional supports, prior experience, and opportunities for online teaching. Despite this, the finding is helpful as a programme-design benchmark as it shows that meaningful capability development does not happen in a short technical workshop.

5.4 Programme Evaluation Evidence

The 300 faculty who took the Online Pedagogy Program were evaluated by Forman. This evaluation used a combination of readiness and TPACK instruments, programme evaluation and interviews. The evidence converged around perceived improvement in readiness/confidence. The student perspective of the programme helped raise awareness of inclusive design of online courses and building a community. The key areas of improvement were technology integration, learning outcomes and community building (Forman, 2023).

The programme evidence is consistent with the literature of the systematic review since it relates faculty learning with the student experience. When faculty development participants experience online learning as learners, critique the instructional

design, modify a component of a course, and get feedback, faculty development is more likely to impact teaching. The sequence provides a direct connection between professional learning and instructional implementation.

Table 2. Evidence-informed structure for online sports professional development

Component	Sports-specific application	Faculty outcome	Evaluation indicator
Technological capability	LMS, video, annotation, portfolios, analytics	Technological readiness	Course artefact and task completion
Pedagogical integration	Outcome alignment, engagement, asynchronous teaching	Pedagogical readiness	Peer-review rubric
TPACK development	Technology selected for sport content and pedagogy	Digital self-efficacy	TPACK scale
Authentic practice	Create and teach an online sports module	Teaching confidence	Pre/post confidence scale
Peer learning	Video review, course critique, moderation	Socially supported confidence	Peer-network participation
Assessment design	Digital performance evidence and rubrics	Assessment readiness	Assessment-quality rating
Institutional support	Instructional design, technical support, development time	Sustained readiness	Support utilization and retention

5.5 Peer Learning and Social Support

The study for 2025 university-teacher shows quantitative evidence of the significance of pedagogical advice network. Self-efficacy of teachers was higher when they asked colleagues for pedagogical advice. The mean value of the self-efficacy of educational advice colleagues nominated was 0.24 points higher than the educational advice respondent received, SD = 0.80 points. The average difference between the highest-scored nominated colleague and the non-nominated colleague was 0.46 points (SD = 0.83). Based on these findings, faculty professional learning takes place in the context of social networks as well as formal training (Verstraeten et al., 2025).

Peer learning for sports faculty can have many forms, such as reviewing video of a teaching demonstration, assessing each other's online practical activities, creating a rubric together, moderating digital practical task portfolios, and analysing student engagement data together. Such activities have the potential to transform professional learning into common practice and offer social modelling which can build confidence.

5.6 Evidence Scale

Figure 3 visually depicts the size of selected evidence streams. There is a solid institutional survey base in the 210-faculty readiness study. The 82 study systematic review covers a wide variety of teacher online professional learning. The 57 studies on digital competencies in higher education provide a more targeted evidence base for the oTPD. The 11-study systematic review offers a purposeful evaluation of the effectiveness of formal online PD. They serve a variety of functions and cannot be considered as identical samples, but taken together, the scale shows that there is considerable research activity.

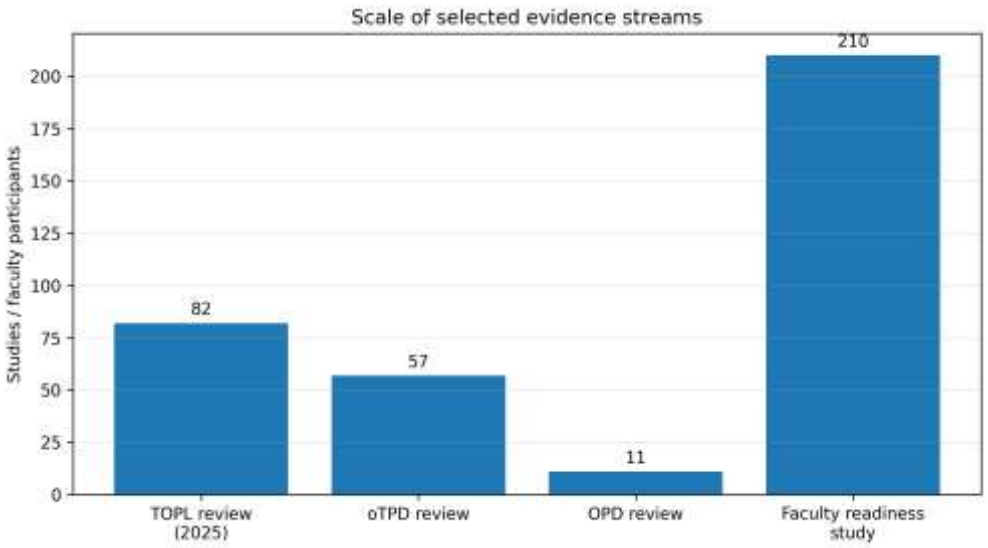


Figure 3. Scale of selected evidence streams; values represent published study counts or faculty participants and are not comparable effect measures.

5.7 Evidence Coding

A clear coding for 20 selected evidence streams resulted in six main areas of focus: readiness and self-efficacy, professional development, technology and TPACK, and institutional and social support. The coding is shown as a descriptive pie chart in figure 4. The coding represents an analytical organization of the literature selected and is not an estimation of the population. It suggests that institutional and social conditions are comparatively less explored and studied along with the readiness and confidence, and professional development and technology integration are more studied.

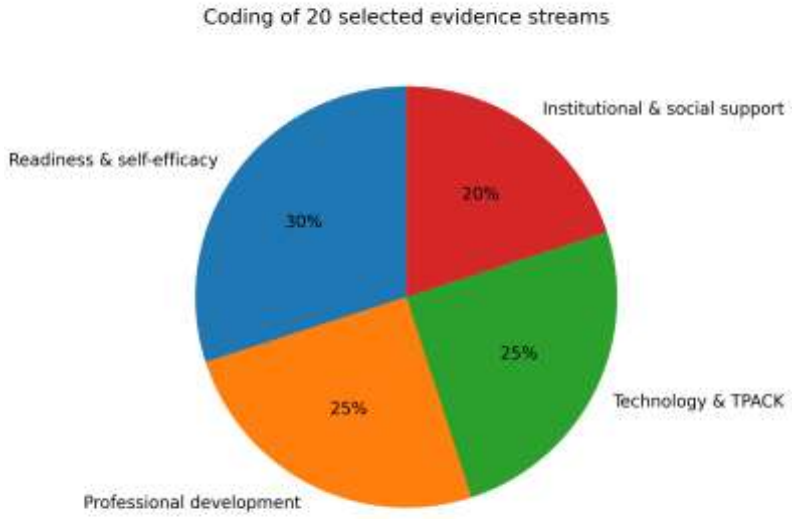


Figure 4. Descriptive coding of 20 selected evidence streams used in the present synthesis.

5.8 Sports-Specific Application

The evidence supports the adaptation of general online professional development to the sport-specific teaching tasks. Video recording, annotation, learning-management systems, virtual collaboration, video learning portfolio systems, and dashboards of data should be part of the technological readiness. Pedagogical readiness should cover demonstration design, asynchronously-coached feedback, practical assessment, peer observations, and authentic tasks. Self-confidence should be built by repetition and practice and not by a one-time orientation session. A key component of course design skills should be evaluated based on real sports modules and not generic technology tasks.

A sports faculty-development programme can adopt the following steps: demonstration activities, guided practice activities, peer review, independent course development, implementation and evaluation. The sequence follows evidence linking mastery experience with increased self-efficacy and readiness, as well as peer interaction, professional-development exposure, and online teaching experience with increased self-efficacy and readiness. The progression also will decrease the disparity between students' self-perceived competence and the quality of their online course designs.

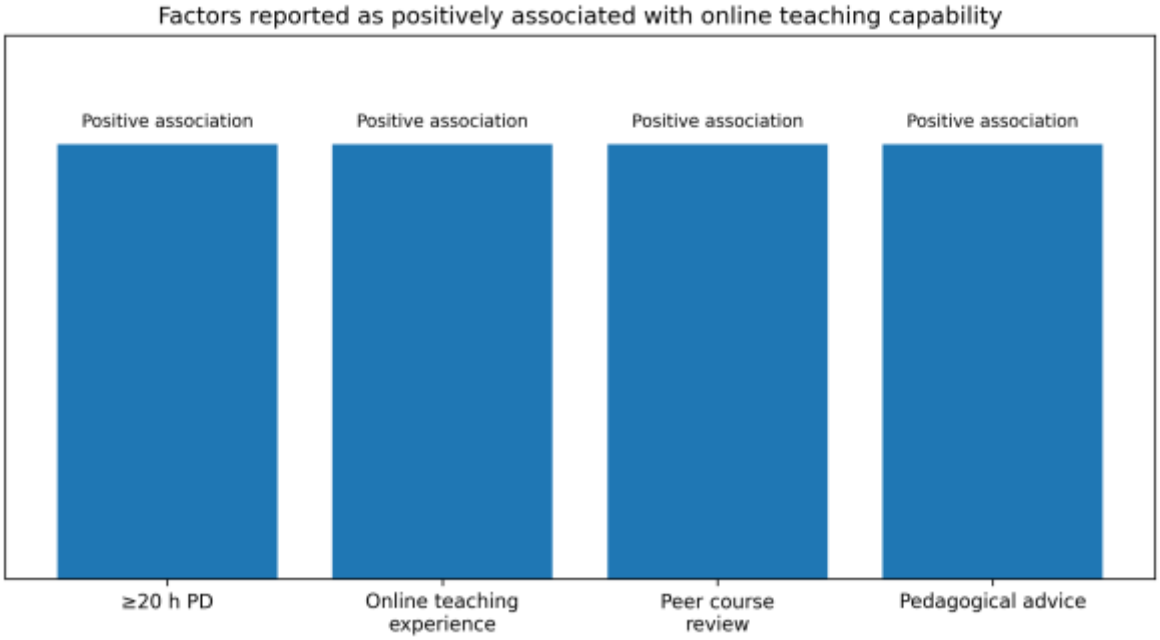


Figure 5. Factors reported in the selected literature as positively associated with online teaching capability.

6. DISCUSSION

The evidence suggests that online sports professional development, when sustained, applied, and collaborative, and pedagogically integrated, can contribute to faculty readiness and confidence. The central theme is not that technology training leads to readiness automatically. Professional development needs to be effective if it can help faculty link technology to the course goals, instruction, assessment, teacher-student communication, and the content.

The 2025 readiness evidence is a helpful benchmark. The mean readiness score is 3.3/5, which suggests that the country is moderately ready and not fully prepared. This was followed by TPACK self-efficacy of 2.9/5, which was lower, suggesting that the process of integrating technology with pedagogy and content may be more challenging than the mere willingness or readiness. The institutional support was still lower at 2.6/5. This means that programmes that train faculty alone, without support from infrastructure, instructional design support, workload allocation, and peer networks, may not have much impact.

This direct implication for professional development is the relation between the teaching experience in online learning and self-efficacy related to TPACK. Training should provide opportunities for further practice related to training. To build confidence in the use of an online assessment tool, the faculty could be introduced to a tool in a workshop, could be asked for feedback,

revise it, and then use it in an actual course. It can be done the same way in sports video analysis, digital portfolios, virtual demonstrations and coaching feedback online.

There is evidence for minimal training as at least 20 hours of professional learning has been shown to be positively correlated with self-efficacy and course design implementation. Shortened orientations are acceptable for platform navigation, but a thorough orientation is needed to be ready. Professional development should be spread over time to allow for the application of learning among the sessions. There are mechanisms for transfer, such as peer review and revision of the course.

The sports discipline introduces an additional level as not all learning outcomes can be conveyed as text or via traditional video lectures. Multimodal evidence may be required for movement quality and technique, tactical decision making, fitness assessment, coaching communication, and practical safety. Physical performance to digital learning objects should be a part of faculty development, and strategies for this should not be compromised by compromising on assessment authenticity. Depending on learning outcomes, students can submit an annotated video, performance logs, skill demonstration, peer feedback, or data-driven performance report.

The CI perspective is important because online sports education must have teaching presence in the form of instructions and feedback; social presence in the form of peer interactions and sports education activities; and cognitive presence in the form of analysis, problem solving and application. Educators can gain awareness of student experience and online community needs through professional development where educators experience these dimensions as learners.

Peer learning is another way to achieve effectiveness. The study results in 2025 indicated that teachers who consulted with fellow teachers for pedagogical guidance had more self-efficacy. There is a specialism in sports departments for biomechanics, coaching, exercise physiology, sport psychology, management and physical education. These domains can be integrated together and can be used to facilitate development of interdisciplinary courses in structured professional learning communities. Peer review can also help to minimize isolation, and give practical examples of ways that colleagues solve the problems of online teaching.

The evidence also shows that beyond participant satisfaction, the outcomes of professional development need to be evaluated. Satisfaction surveys may be used to determine whether a workshop was received well but are not a valid measure of increased teaching readiness. The enhanced assessment should include pre and post self-efficacy, readiness, TPACK, course-design quality, technology use, student engagement, assessment quality, and teaching practice. Self-report should be complemented with course artefacts and peer observation, if possible.

Another question is around the relationship between confidence and competence. High confidence does not necessarily mean high quality online teaching. According to McMahon's research, faculty might not be able to self-assess their abilities to design courses accurately. Teaching and learning skills should thus be built along with objective evidence of performance. A mismatch between perceived and demonstrated capability could be discovered through peer assessment, instructional-design review, and evidence of student learning.

Continued institutional support is critical. Without stable platforms, video storage, digital assessment tools, technical support, instructional design assistance and the time to develop these online courses, faculty cannot be expected to produce high quality online sports courses. Online course development should be considered academic work in the institutional policy. Even high-quality development can be undermined by workload models that allocate no development time.

Limitations to the evidence base. Self-report measures are commonly employed in many studies, and thus, there is a lack of assessment on whether perceived readiness is reflected in actual quality of teaching. There is also some variation in the amount of professional development time, the characteristics of the participants, institutional environments, and outcome measures in the literature. Volunteers are sometimes used in studies, which can have a higher level of interest in online teaching. Systematic reviews reveal methodological shortcomings and inadequate participation by certain geographical regions and/or higher-education settings. Evidence is more limited in the case of sports than in the case of higher education.

New studies need to try to validate sports-specific models of professional development using controlled or quasi-experimental approaches. Baseline and post training readiness should be assessed in conjunction with TPACK self-efficacy, course-quality ratings, peer observations, student engagement, assessment validity and learning outcomes. Long-term follow-up needs to explore long-term maintenance of confidence and course design enhancements post-six and twelve months. Short workshops,

extended programmes, peer-learning models, coaching communities and a blended approach to professional development may all be explored in comparative studies.

The overall message is that online sports professional development is to be created as an institutional capacity development system. One workshop can solve an urgent technical need while continuous professional development can develop the pedagogical, technological, social and organizational context for quality online teaching.

7. CONCLUSION

Online sports professional development is a powerful tool to build faculty perceptions of online teaching readiness and confidence. The evidence shows that readiness is multi-faceted and encompasses technological skills, online pedagogy, course design, attitudes, self-efficacy, institutional support and prior experience. Professional development is best when these dimensions are woven together, and not when technology is a stand-alone competency.

There are numerous numbers out there that support this conclusion. The mean ratings that were given by the university teachers were for readiness at 3.3/5, TPACK self-efficacy at 2.9/5, and institutional support at 2.6/5. The amount of online teaching experience significantly predicted TPACK self-efficacy. Of the 104 faculty, there was a correlation between 20 or more hours of professional development and increased self-efficacy and reported use of effective online course-design practices by faculty. There was an Online Pedagogy Program that included 300 faculty and which saw perceived improvements in readiness and confidence. The three systematic reviews (11, 57, 82 studies) provide additional evidence of the importance of incorporating practical activities, learner support, relevance, flexibility, collaboration, feedback, and application in effective online professional learning.

Professional learning in sports education should include video demonstration, analysis of movement, digital portfolio, practical assessment, effective communication in coaching, movement representation, student involvement, accessibility and authentic evidence of performance. The best model is a continuous program of technological orientation, pedagogical application, peer review, authentic course development, implementation, and evaluation.

Researcher trust is a key but not the final indicator. Self-reported confidence measures should be supported by demonstrated course-design quality, teaching practices, student engagement, and learning outcomes. Efforts must be made to support individual faculty capabilities in instructional design, technology support, workload distribution and professional learning communities to turn them into sustainable online teaching capacity.

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