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Concordance of judgement: A tool to foster the development of professionalism in dentistry

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Abstract

Introduction: Developing professionalism notably involves learning how to make professional judgements in ambiguous situations. The Concordance of Judgement Test (CJT) is a learning tool that was proposed to develop professionalism competencies, but it was never performed in dentistry or used with a synchronous methodology. The present study evaluated the feasibility of the use of CJT in the context of dental education, to foster professionalism and stimulate reflexivity and discussion.

Materials and Methods: After different steps of optimization, a questionnaire presenting 12 vignettes was submitted to 33 Canadian students. Second, after an additional optimization, a questionnaire of 7 vignettes was submitted to 87 French students. An immediate educational feedback was proposed after each vignette to promote reflexivity and discussions during the experience.

Results: The overall experience of the students was reported as good, thanks to the feedback of real-life situations. This promoted reflexivity and stimulated discussion between students and educators regarding professionalism issues. The students considered CJT as a relevant and well-adapted tool, and reported positive feelings regarding the inter-university aspect of the activity. The mean score of the panel members was close to 80/100 and the mean score of the students was 5 to 10 points lower, which is in agreement with docimological performance.

Conclusion: The results suggested that the use of CJT in a synchronous way was a feasible and relevant tool to motivate the students to improve their professionalism, and to stimulate their reflexivity and discussion. The students reported positive experience with CJT, and we believe that this tool can be integrated in the dental curriculum.

KEYWORDS
concordance of judgement test, decision-making, learning by concordance, professionalism

1 | INTRODUCTION

Professionalism is one of the main source of dissatisfaction, concern, and complaint from patients.[1,2] It is a complex and multi-dimensional behaviour, hard to teach and learn, which has individual, interpersonal, and societal dimensions. To provide effective and safe care to the patients, an important set of knowledge, attitudes, and skills is required (honesty, integrity, respect, etc.). Professionalism is defined as a major part of the whole dental curriculum,[3,4] as addressed by European and American guidelines.[2,5] Hence, the professionals need methods to improve their ways to teach and assess professionalism.

A literature review[3] reported numerous methods to teach professionalism, but most of them were time-consuming due to their need for direct contact. Over the years, the educator/student ratio tended to decrease, which makes difficult the implementation of the reported methods.

In France, the number of dentistry students increased since the 2000s and is still expected to increase (14%) over the 2021–2025 period, whereas the number of teaching staff may not evolve. There is currently no consensus regarding the best way to teach and assess professionalism.[3,6-8] However, the key points reported were that providing feedback to students and promoting reflexivity were crucial to improve their professional behaviour.

In 2015, the concordance of judgement tool (CJT) was proposed to address the required competencies related to professionalism, such as the ethical or moral ones.[9-11] The aim is to reflect the complexities of medical practice and to offer opportunities in an open and safe forum to guide students' learning on un/professional behaviour.[12,13] It also aims to fill the gap between clinical courses and the reality of clinical decision-making.[11] This tool provides learners with role-playing situations in which they are asked to decide the degree of appropriateness of a proposed behaviour. Their answers are then compared with those of a panel of "experts", offering immediate feedback. Thus, CJT combines cognitive apprenticeship with critical thinking in the specific context of professionalism. Although it is called a test, it is used most of the time as a learning tool in a "learning-by-concordance (LbC)" approach, that embeds complexity and uncertainty by relying on real-life situations.[14] The use of LbC allows students to think about situations involving professionalism and to see whether they find it useful for their development. Overall, it also permits to explore the value of giving scores and what such scores may mean.

The promising results of the pilot study conducted by Foucault et al.[9] were reported in the context of medical education. As the dental curriculum aims to foster the competencies required to develop professionalism, such as putting the needs of the patients first, being prepared for the reflexivity of practice or make ethical and responsible clinical decisions, the present study evaluated the feasibility of the use of CJT in the context of dental education, to foster professionalism and stimulate reflexivity and discussion.

2 | MATERIALS AND METHODS

2.1 | Study design, participants and data collection

The present study was conducted by 20 dental educators who were also the panel members. They came from 6 universities in Canada (Montreal) and in France (Bordeaux, Lyon, Nancy, Paris, Toulouse). The study also involved dental students from 5 universities (Montreal, Bordeaux, Lyon, Nancy, Toulouse) who were at the same level of academic advancement. The project was submitted and approved by the ethical research committee of Université de Montréal (CERC#2021-380) for the Canadian part of the study and from SIFEM, the International Francophone Society for Medical Education, for the French part.

The selection of the panel members was performed as recommended for high stake examinations.[15-17] Inclusion criteria were to

have at least one of the following attributes: being actively implicated in teaching (to promote sustainability of the project), being post-graduated in medical and dental education, being implicated in teaching ethics or professionalism, being interested in innovative strategies to implement professionalism in their curriculum. All the 20 panel members were asked to complete the CJT and to explain their answers. All comments were collected and summarized to be shared with students.

This study was entirely performed using an educational and real-time web-based platform (thanks to a collaboration with the Wooclap® company, Brussels, Belgium), which specifically designed for this study a CJT with optimal access and live experience for students and panel members (Figure 1).

2.2 | CJT development methodology

The present protocol, following the recommendations of the guidelines for CJT,[14,18] was adapted from a previous publication[5] to the context of dentistry and using a synchronous participation; all the students and educators at the same time. This synchronous approach enabled discussion among all the students from the different universities, which was particularly appreciated by both students and educators, since they were able to compare their points of view.

During several meetings, two experienced dental educators created vignettes to address questions regarding professionalism using CJT and LbC framework. According to Charlin[14] a vignette is composed of: (1) a short text describing a situation, (2) proposed behaviour(s) in response to the situation, and (3) a four-point Likert scale to evaluate the acceptability of the proposed behaviour in the situation ("−2" = totally unacceptable; "−1" = unacceptable; "+1" = acceptable; "+2" = totally acceptable); the panel members were also asked to provide a brief explanation of their choice.

A "situation" is a professional environment imagined in an ambiguous context. Some situations were inspired by the Association of Canadian Faculties of Dentistry curriculum, while others were adapted from previously experienced situations; especially when there were potential different viewpoints between educators and students, or educators themselves. A behaviour is an attitude, a gesture or a response that the student might exhibit in the given situation.

A first series of 13 situations that led to 41 behaviours was sent to beta testers (some panel members) to improve the fluidity and

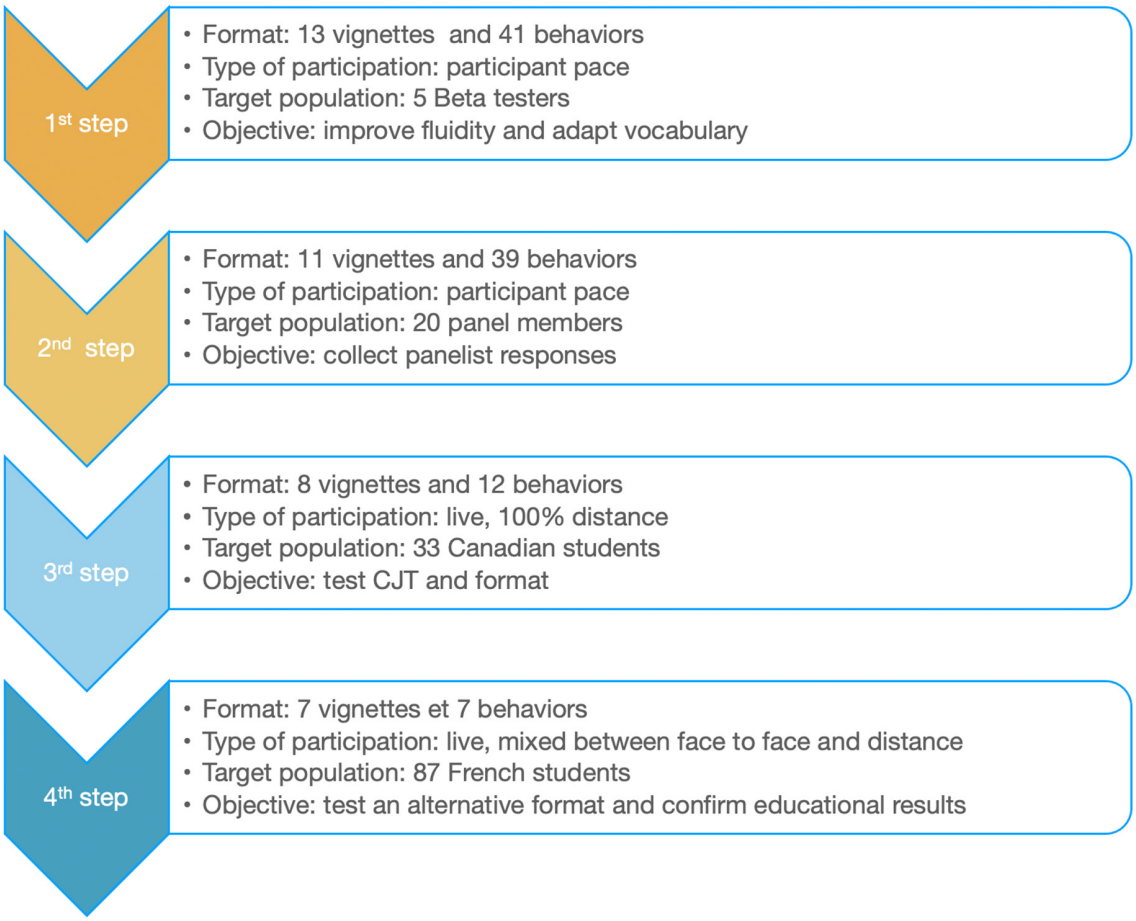

FIGURE 1 Synthesis of the overall workflow. Each step is described according to the format (number of situations and behaviours), type of participation (live or participant pace), the target population (beta testers, panel members, students), and the objective. CA Canada, FR France.

adapt the vocabulary. Some situations and behaviours were subsequently removed according to their comments and suggestions: several behaviours were rephrased or removed as considered too simple, unrealistic, or not adapted to undergraduate students. A second series of 11 situations that led to 39 behaviours was submitted to the panel members. Each panel member response was then analysed, at the question level and at the panel member level. The aim of this step was to identify the questions for which their answers were not sufficiently concordant. All the questions having uniformly dispersed or unanimous answers were removed to improve internal consistency/reliability.[19] To improve the educational aspect, a specified parameter was added; only the behaviours with at least 75% of the panel members responding in both positive (+1 or +2) or negative ways (−1 or −2) were kept. This parameter was added to remove all the behaviours for which the panel members were in strong disagreement, to propose to the students a clear educational message.

These first two steps allowed to obtain the version that was submitted to the Canadian students, composed of 8 situations that led to 12 behaviours. After considering the Canadian students' comments and suggestions, a version composed of 7 situations that led to 7 behaviours was submitted to the French students. The overall workflow is summarized in Figure 2.

2.3 | CJT aggregate scoring

To determine a score for each panel member and student, a calculation was performed following the guidelines.[15] The scores of each behaviour were derived from the answers given by the panel members.[18] Each answer was scored according to how many panel members chose it, using a technique called "aggregate scoring".[9,19] The most frequently chosen response per vignette, for example "+1", is given 1 full point. The other responses, for example "+2", are given a fraction of point according to the panel response: $\frac{\text{number of panel members responding "+2"}}{\text{number of panel members responding "the most chosen response"}}$. Each evaluation was then calculated to obtain a score out of 100.[15,19]

2.4 | Organization of the first and second study

All involved students had an individual and anonymous access. It was presented as an optional educational experience; their score would not count toward their academic average.

2.4.1 | Canadian study

The study was simultaneously conducted using an online meeting platform (Zoom®) and the Wooclap® platform. Comments from students were anonymous and visible from other participants only when all answers had been received. For each question, a 3 to 5 min live feedback period followed. Educational feedback was performed by choosing a selected number of student's comments that were discussed and compared to the panel member responses. The discussion focused on the opinion favoured by most students, but also on contradictory and negative opinions, to stimulate reflexivity and share the experiences of the participants.

2.4.2 | French study

The French study was performed 6 months later, it was synchronous, using a multicentre approach in 4 French universities, during a blended format mixing face to face and distance education. The 4 universities were all connected with educators and students in their own classrooms, and additional students were also connected and participated remotely. As for the Canadian study, direct educational feedback was proposed for each behaviour to promote reflexivity and share the experiences. This time, 13 of the 20 panel members were connected to lead the discussion, share their position and analyse the vignettes.

2.5 | Assessing the students experience and scores

To evaluate the students' CJT experience and feedback, a survey was provided to all of them at the end. Their satisfaction was measured using a survey that included 5 questions using a five-point Likert scale of agreement, and an open question to freely share comments about the experience or possible suggestions of improvement. The following 5 questions were adapted from a previous study[9]:

1. Experience with other universities added value to the event.
2. I plan to discuss my answers with other students.
3. I have thought about the type of healthcare professional I want to become.
4. The vignettes made me consider authentic situations.
5. This type of questionnaire is suitable for reflecting and developing one's professionalism.

Students' CJT scores were calculated using the same method that was used for the panel. The students were informed that the score will not be shared during the session but could be provided under request.

3 | RESULTS

The CJT was provided online to 33 Canadian dental students in their third- and fourth-year, and to 87 French dental students in their fourth and fifth years. Among French students, 28 students were excluded from the analysis as they did answer to less than 5 vignettes. Students cooperated during the two studies and appreciated the possibility of direct feedback having different nuances and aspects from the panel comments. Several students broke their anonymity to actively participate to the discussion and to share their

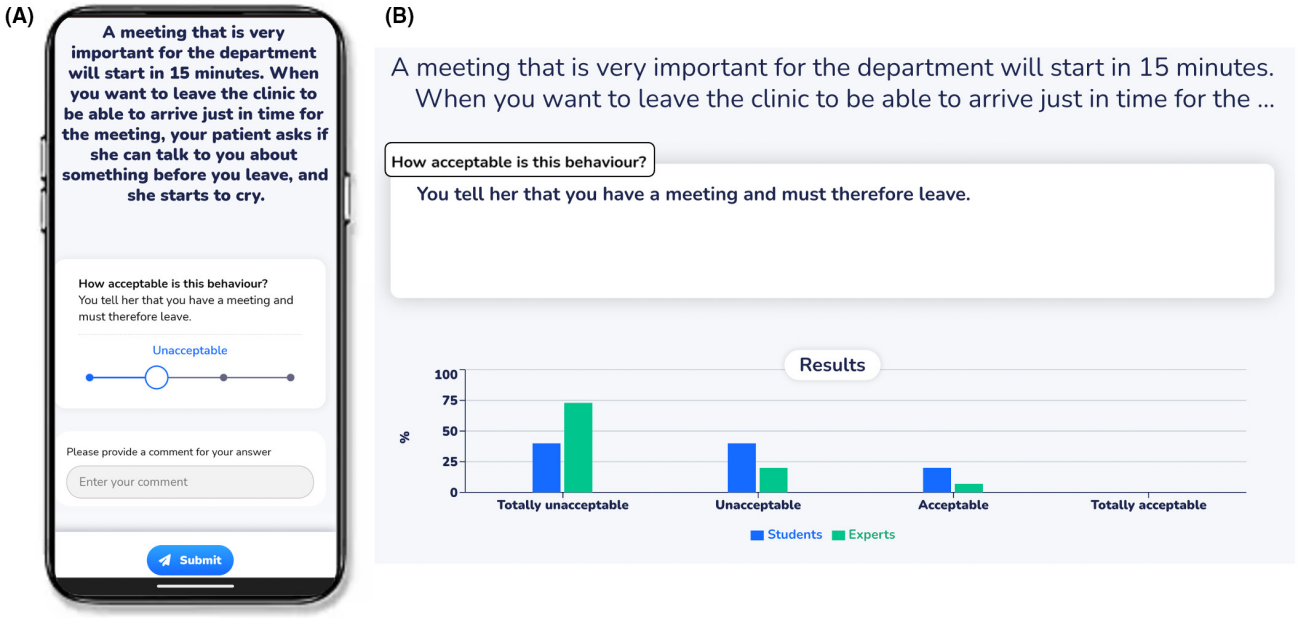

FIGURE 2 View of the students' experience using the concordance of judgement tool (CJT) with Wooclap® on their smartphone or computer. First, students must decide on the appropriateness of the proposed behaviour by settling on a response on the 4-point scale. They must then provide a short explanation for their response (A). Once all votes are in, students can compare their response to those of the panel members and appreciate the variability in answers (B). The responses can appear on their personal computers or be projected in the classroom, depending on the context.

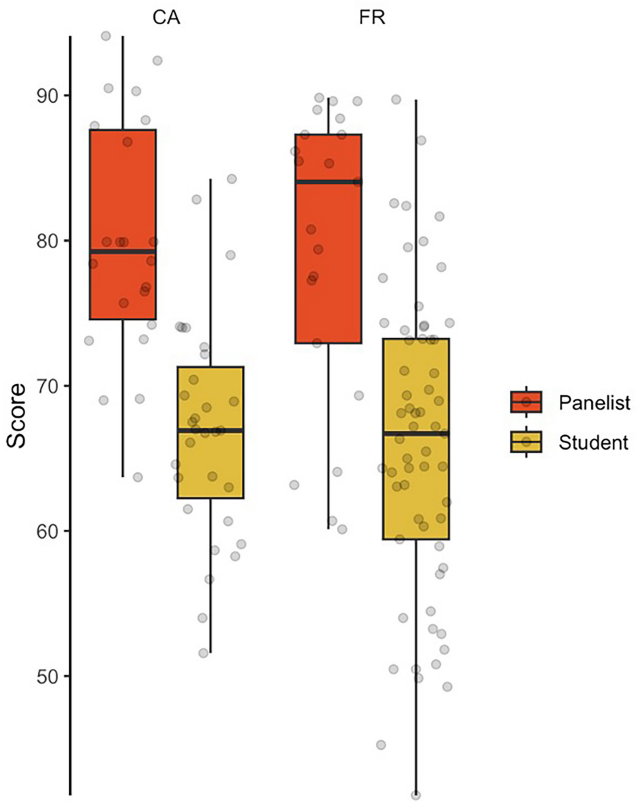

FIGURE 3 Overall score of students and panel members after the first "Canadian" (CA) and second "French"(FR) questionnaire.

personal analysis regarding a situation or a behaviour, or sometimes to express an opposite position from that of the panel members.

The mean score distribution for panel members and students is reported with a normal distribution regarding CJT standards: a mean score of panel members close to 80/100 (79.9/100 for Canadian panel members and 79.4/100 for French panel members) and a lower mean score for students (66.5/100 for Canadian students and 66/100 for French students) (Figure 3).

The final qualitative questionnaire showed that the students appreciated the educational experience (Figure 4). The students thought that the situations were realistic (92.9% of Canadian and 100% of French students agreed or strongly agreed), promoted reflexivity regarding their future healthcare professional identity (92.9% of Canadian and 83.1% of French students agreed or strongly agreed), and stimulated the discussion with other students regarding professionalism (57.1% of Canadian and 66.1% of French students agreed or strongly agreed). The students also reported that this educational tool was adapted to initiate the teaching of the aspects of professionalism (92.8% of Canadian and 91.5% of French students agreed or strongly agreed). Finally, they also reported a positive feeling regarding the inter-university aspect (85.7% of Canadian and 93.2% of French students agreed or strongly agreed).

The open question at the end of the feedback questionnaire provided several additional elements. The experience was mostly reported as interesting and relevant by 40.2% of the included students. Interestingly, it was also reported by 6.0% of Canadian and 8.0% of French students that the activity was slightly too long.

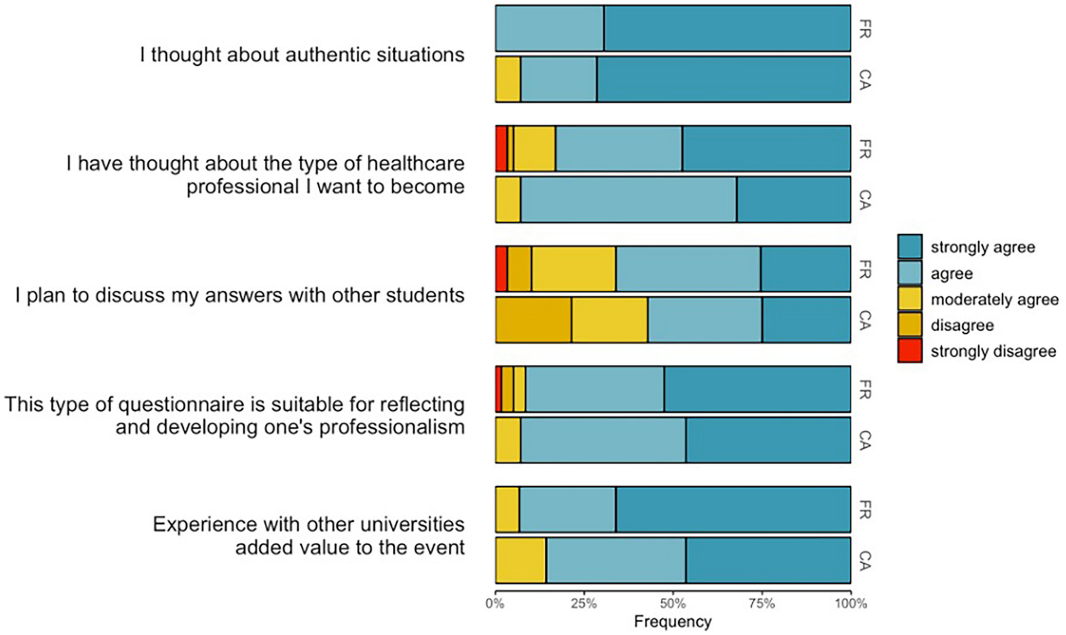

FIGURE 4 Questionnaire reporting student's experience. (FR, France; CA, Canada).

Finally, following the French study, due to the in-person aspect, several informal discussions between students and educators were reported at the end of the official session. The students were more aware to discuss and ask educators about professional questions and share personal experiences of unprofessional behaviours they observed in clinical education.

4 | DISCUSSION

The present study showed that the use of CJT in the context of dental education was feasible; we succeeded in setting up the CJT in two countries, first in Canada and then in France, and to involve 5 universities, 20 dental educators and 120 students. The CJT enabled the students to think about their level of professionalism and to stimulate their reflexivity as well as their discussion with each other and with the educators. However, some points must be addressed before CJT integration in the dental curriculum.

The scores reported herein are in accordance with the published docimology of CJT[19]; the mean score of the students was 5 to 10 points below the mean score of the panel members. There was no significant difference between the French and Canadian results, which suggests that the tool was modestly or not culturally sensitive. Nevertheless, given the differences in the curriculum construction between the two countries, this question deserves to be deeply explored in further studies.

The aim of the present study was not to provide a score to the student (unless requested), but rather to provide feedback as already reported[14] and to create the desire to continue learning professionalism. The scores were not used to quantify the academic progress of the students; the aim was to stimulate discussion in small groups to motivate them to develop professionalism competencies. However, for students with low scores, it would be of particular interest to provide them an educational support/assistance by creating custom training activities, such as study groups, portfolio, additional CJT situations or Situations Judgement Test (SJT).[20] This last tool was already investigated in the field of medical education regarding the assessment of professional behaviour. The methodology is different between CJT and SJT: in CJTs the participant is asked to judge a chosen behaviour, whereas in SJTs the participant is asked to choose between several proposed behaviours. This type of format might be interesting for the students to compare the SJT results obtained with the present results.

The students reported that they were satisfied with the CJT and that they learned from it, a small proportion (8.0%) thought that the session was too long. One of the most positive aspects of the open question is the vocabulary used by the students. Words such as "interesting", "stimulating" were used, they are similar with those reported by the students during the previous study of Foucault et al.[9] Students realized that learning professionalism was important and as in the study of Fernandez et al., they reported that being able to compare their reasoning processes with those of the panel members[11] highlighted their scope for improvement. Interestingly, one student expressed the need to include professionals out of the university to prevent a positioning of the panel that could be "academic" or influenced by local beliefs.

One of the particular features when using CJT for professionalism, is the use of a four-point Likert scale from "totally unacceptable" to "totally acceptable", with no middle point. This scale was initially decided to force the participants to choose whether they thought the suggested behaviour was acceptable or not.[5,7] Interestingly, the analysis of the students' response profile suggested that students were often more prone to remain close to middle points compared to panel members; they reported difficulty to position themselves at

the extremes. It could be hypothesized that the clinical experience may ease the positioning on the extreme values.

While a previous study used an asynchronous approach,[9] herein a synchronous methodology and immediate feedback were used, which allowed to improve the experience of the students and educators. Similarly, the selection of panel members plays a fundamental role for students.[14] The choice herein was not to involve students by asking them to identify and vote for professors or clinicians that they perceived as good examples of professionalism, as previously proposed.[16] The study aimed to select educators motivated and involved in the promotion of professionalism who were also recognized by their peers. Of note, it was decided to remove 75% of the initial behaviours due to the lack of concordance among the panel members. The rational of this decision was based on the will to improve fluidity and to give a clear educational message. It is also linked to the previous studies in concordance assessment that suggested to remove unclear situations having low concordance of panel.[15,21]

The tool used to animate a CJT activity is crucial because it must be fluid and ludic to improve immersivity and interactivity and an to get immediate feedback. The literature reported that the use of mobile-based learning materials enhanced the satisfaction, increased the motivation and the confidence of the students compared with traditional teaching methods.[22-24] In the present study, thanks to a collaboration with Wooclap®, an innovative interface specific for CJT was used, with positive oral feedback from both panel members and students. This tool contained the vote and comments of the panel members, it was easy to manage for the educators, and the data were collected in a simple format to facilitate post session analysis. This direct feedback provided by the panel members allowed students to calibrate their reasoning and provide key educational messages. In the present study, the students had access to all the comments of the panel members and participated to a live debriefing session, which was reported to improve the educational impact.[25] During this live debriefing session, some students broke their anonymity to participate to the discussion. However, it is necessary to emphasize the importance of anonymizing the results, so that the students do not feel forced to give the answer that they think is expected by their teachers. Students often see an imperative to conform and to agree.[3]

Limitations could be reported after these two studies. The lower-than-expected participation rate, especially for the French part, is probably due to enrolment methods: some faculty did not go through student associations, which have a driving role. The voluntary basis of this activity could also be an explanation. It was also reported that the timing, close to the final examination, was a limitation for several students. Finally, the overall methodology of CJT including creation, validation of the questionnaire by panel members, optimization of the question and use with students, could be time-consuming and demotivating for educators, which highlights the interest of a collaborative and interuniversity approach.

According to the results of the present study, it could be considered to also provide the CJT at other academic levels, such as continuing professional development. In this context, the clinical situations could also be more complex and be inspired by behaviours related to private practice. CJTs could be integrated into a curriculum of professionalism and associated with other educational tools, such as early patient contact, group discussion, and immediate feedback during clinical training.[26] This would enable each student to progressively develop his own professional identity and for students with difficulties, to be identified and helped.

5 | CONCLUSION

The present study reported that the use of CJT to learn professionalism in dentistry was feasible. The results suggested that the use of CJT in a synchronous way could be a relevant tool to motivate the students to improve their professionalism, and to stimulate their reflexivity and discussion. The students reported positive experience with CJT, and we believe that this tool can be integrated in the dental curriculum.

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CONFLICT OF INTEREST STATEMENT

No conflict of interest to report.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

ETHICS APPROVAL

The project was submitted and approved by the ethical research committee of Université de Montréal (CERC#2021-380) for the Canadian part of the study and from SIFEM, the International Francophone Society for Medical Education, for the French part.

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REFERENCES

1. Field JC, Cowpe JG, Walmsley AD. The graduating European dentist: a new undergraduate curriculum framework. *Eur J Dent Educ*

Off J Assoc Dent Educ Eur. 2017;21(suppl 1):2-10. doi:10.1111/eje.12307
2. McLoughlin J, Zijlstra-Shaw S, Davies JR, Field JC. The graduating European dentist-domain I: professionalism. *Eur J Dent Educ off J Assoc Dent Educ Eur*. 2017;21(suppl 1):11-13. doi:10.1111/eje.12308
3. Birden H, Glass N, Wilson I, Harrison M, Usherwood T, Nass D. Teaching professionalism in medical education: a best evidence medical education (BEME) systematic review. BEME guide No. 25. *Med Teach*. 2013;35(7):e1252-e1266. doi:10.3109/0142159X.2013.789132
4. van Mook WNKA, van Luijk SJ, de Grave W, et al. Teaching and learning professional behavior in practice. *Eur J Intern Med*. 2009;20(5):e105-e111. doi:10.1016/j.ejim.2009.01.003
5. Buchanan R, Duley SI, Perkins D, Feldman C. ADEA statement on professionalism in dental education: (as approved by the 2009 ADEA house of delegates). *J Dent Educ*. 2017;81(7):885-890.
6. Riley S, Kumar N. Teaching medical professionalism. *Clin Med*. 2012;12(1):9-11. doi:10.7861/clinmedicine.12-1-9
7. Guraya SS, Guraya SY, Doubell FR, et al. Understanding medical professionalism using express team-based learning; a qualitative case-based study. *Med Educ Online*. 2023;28(1):2235793. doi:10.1080/10872981.2023.2235793
8. Huang CD, Jenq CC, Liao KC, Lii SC, Huang CH, Wang TY. How does narrative medicine impact medical trainees' learning of professionalism? A qualitative study. *BMC Med Educ*. 2021;21(1):391. doi:10.1186/s12909-021-02823-4
9. Foucault A, Dubé S, Fernandez N, Gagnon R, Charlin B. Learning medical professionalism with the online concordance-of-judgment learning tool (CJLT): a pilot study. *Med Teach*. 2015;37(10):955-960. doi:10.3109/0142159X.2014.970986
10. Foucault A, Dubé S, Fernandez N, Gagnon R, Charlin B. The concordance of judgement learning tool. *Med Educ*. 2014;48(5):541-542. doi:10.1111/medu.12467
11. Fernandez N, Foucault A, Dubé S, et al. Learning-by-concordance (LbC): introducing undergraduate students to the complexity and uncertainty of clinical practice. *Can Med Educ J*. 2016;7(2):e104-e113.
12. Al-Eraky MM, Donkers J, Wajid G, Van Merrienboer JJG. Faculty development for learning and teaching of medical professionalism. *Med Teach*. 2015;37(suppl 1):S40-S46. doi:10.3109/0142159X.2015.1006604
13. Bernabeo EC, Holmboe ES, Ross K, Chesluk B, Ginsburg S. The utility of vignettes to stimulate reflection on professionalism: theory and practice. *Adv Health Sci Educ Theory Pract*. 2013;18(3):463-484. doi:10.1007/s10459-012-9384-x
14. Charlin B, Deschênes MF, Fernandez N. Learning by concordance (LbC) to develop professional reasoning skills: AMEE guide No. 141. *Med Teach*. 2021;43(6):614-621. doi:10.1080/0142159X.2021.1900554
15. Lubarsky S, Dory V, Duggan P, Gagnon R, Charlin B. Script concordance testing: from theory to practice: AMEE guide no. 75. *Med Teach*. 2013;35(3):184-193. doi:10.3109/0142159X.2013.760036
16. Gagnon R, Charlin B, Coletti M, Sauvé E, van der Vleuten C. Assessment in the context of uncertainty: how many members are needed on the panel of reference of a script concordance test? *Med Educ*. 2005;39(3):284-291. doi:10.1111/j.1365-2929.2005.02092.x
17. Iozzino R, Champin PA, Richert R, et al. Assessing decision-making in education of restorative and prosthetic dentistry: a pilot study. *Int J Prosthodont*. 2021;34(5):585-590. doi:10.11607/ijp.7228
18. Charlin B, van der Vleuten C. Standardized assessment of reasoning in contexts of uncertainty: the script concordance approach. *Eval Health Prof*. 2004;27(3):304-319. doi:10.1177/0163278704267043
19. Vital S, Wulfman C, Girard F, Tamimi F, Charlin B, Ducret M. Script concordance tests: a call for action in dental education. *Eur J Dent Educ*. 2021;25(4):705-710. doi:10.1111/eje.12649
20. Patterson F, Zibarras L, Ashworth V. Situational judgement tests in medical education and training: research, theory and practice: AMEE guide No. 100. *Med Teach*. 2016;38(1):3-17. doi:10.3109/0142159X.2015.1072619
21. Fournier JP, Demeester A, Charlin B. Script concordance tests: guidelines for construction. *BMC Med Inform Decis Mak*. 2008;8:18. doi:10.1186/1472-6947-8-18
22. Kim SJ, Shin H, Lee J, Kang S, Bartlett R. A smartphone application to educate undergraduate nursing students about providing care for infant airway obstruction. *Nurse Educ Today*. 2017;48:145-152. doi:10.1016/j.nedt.2016.10.006
23. Hester L, Reed B, Bohannan W, Box M, Wells M, O'Neal B. Using an educational mobile application to teach students to take vital signs. *Nurse Educ Today*. 2021;107:105154. doi:10.1016/j.nedt.2021.105154
24. Lee NJ, Chae SM, Kim H, Lee JH, Min HJ, Park DE. Mobile-based video learning outcomes in clinical nursing skill education: a randomized controlled trial. *Comput Inform Nurs Cin*. 2016;34(1):8-16. doi:10.1097/CIN.0000000000000183
25. Wan MSH, Tor E, Hudson JN. Examining response process validity of script concordance testing: a think-aloud approach. *Int J Med Educ*. 2020;11:127-135. doi:10.5116/ijme.5eb6.7be2
26. Garner MS, Gusberg RJ, Kim AW. The positive effect of immediate feedback on medical student education during the surgical clerkship. *J Surg Educ*. 2014;71(3):391-397. doi:10.1016/j.jsurg.2013.10.009

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