

Development of an interdisciplinary journal club concept at a University of Applied Sciences

Introduction

Ongoing professional development is one of the center-stones in a person's vocational life (1). In recent years, there has been increasing interest in establishing and maintaining Journal Clubs (JC) for healthcare professionals (2). The importance and influence of JCs for continuing scientific development in pre- (3) and postgraduate medical education and vocational training are beyond doubt and have been explored in other studies (4–7).

The nurses, midwives and Allied Health Professions (AHPs) in Austria represent the largest group of professional staff providing patient care in the national health services (8), and their potential contribution to the provision of good care is significant. However, while there is a tradition and culture of research in medicine in Austria (9), the research profile of nurses, midwives and AHPs needs to be enhanced. The challenges in developing research and development for AHPs are encountered on the national, as well as the institutional level.

In medical professions, in particular, it is necessary to keep up-to-date with new developments due to legal requirements and in accordance with professional standards (10). Teaching an Evidence Based Practice approach is crucial for students primarily, but also very important for patients and health-care systems (11). Among other activities JCs are a proper method to learn how to read and appraise a scientific paper (12). Students should be introduced, during their educational programme, to this way of thinking as early as possible. Our University of Applied Sciences (UAS) supports continuing professional development for its teaching and research staff. This includes the incremental development of scientific competences and follows a two-staged procedure. Human resources development is divided into basic and advanced scientific

competences (cp. fig. 1). For this purpose the UAS offers the following different enabling proficiencies: in-house trainings, individual advanced trainings, or support for enhancing qualifications toward Master- and PhD-Level. The JC should be used in both competence categories as a working tool for personal and professional improvement.

Although the aims of JCs are well introduced (12), each institution and setting must select an appropriate JC format to support and motivate personnel in the long-term (13) and guarantee JC longevity (14). Bottom-up methods are well known for introducing various new concepts, i.e. community or technological development (15, 16), but there is little research related to the creation of a JC implementation concept.

A first inter-professional JC was implemented at the UAS in 2011 and discontinued 18 months later due to lack of interest and other organizational priorities. In addition to other measures carried out and as a part of the personnel development programme of the UAS (cp. fig. 1) it was planned to offer a JC again. To promote the staff's attendance at the newly planned JC, an online survey was conducted to understand their needs and requirements (phase I). Based on the results of this survey (17) the conceptualization process of a new JC could be initiated (phase II) and will be described in this paper. The aim was to integrate the staff actively in the development of the concept, to enhance teaching and research staff's acceptance of the JC, and to intensify their identification with the project and the future JC. Therefore, it was intended to guide and facilitate the process following a bottom-up method (18). Furthermore, we planned to use the knowledge of various experts during the process (19) to optimize the conceptual outcome. The objectives of this research were therefore to develop a final and consensus-reaching concept, which will serve as a basis for implementing the new JC. This objective should be reached by answering the question: What are the requirements to start a new JC at the UAS and which factors can contribute to JC's longevity?

Methods

A qualitative approach (20) of an adapted Delphi-method (21) was combined with expert group discussions (22) and adopted for the study to address the aforementioned objective.

The adaptation of the established Delphi-method (23) was chosen, because the original method does not include meetings in person, but only the collection and processing of written material. Group discussions are an appropriate method of accumulating the participants' opinions about a certain topic (24). The oral data thus collected could subsequently be analyzed. The university's permanent staff was eligible for the expert group; part-time lecturers from outside the university were excluded. The sampling frame was the current list of employees from October 2016, all of whom could be contacted by their official e-mail address. This research was approved by the UAS' Research and Development Department and the UAS' head.

Participants: After a preliminary call for support, interested persons could come forward to the leading committee (i.e. moderators; M.E., S.Ö.). Two men and three women volunteered to take part in the expert group. The mean vocational experience of the experts was 12.3 years in academic teaching and science. An expert was defined as a person with extensive experience in clearly defined areas, i.e. expertise in higher education as well as technical and institutional processes knowledge. These five persons with different scientific and professional backgrounds took part in the Delphi process and the subsequent expert group discussions conducted by the committee. They gave their signed consent for the gathered data to be used. They were provided with written material in advance of both group discussions. This included the published study (17), the planned agenda and prospective critical appraisal tools (25), and evaluation tools for the JC (26), respectively. Two group discussions of about 90 minutes took place with an interval of eight months (February, November 2017). The

groups were led by the committee using input and predetermined questions. At the beginning of each session the moderator briefly explained the goal of the project. Data was recorded and the transcription was outsourced to an independent transcription service. The transcribed data was processed and analyzed using Mayring's qualitative content analysis (27). The categorical system (eight main categories (cp. tab. 1) and further sub-categories) was generated inductively (28) based on the transcribed material as well as on the findings from our previous survey (17). The eight main categories served as a base for the fore coming concept.

Written summarized results were presented to the group members via e-mail with definite questions: "a) is the category sufficiently defined through the following statements?, b) if something is missing, please add your personal comment, c) are you concordant with all statements?, and d) if not, why so? What should be amended for your personal consent?".

Participants gave written commentaries and propositions.

The so-based revised and adapted document was the basis for the second meeting and followed the same procedure. After finishing a first draft of the JCs' conceptual framework this document was presented to three additional, previously not involved staff members with profound scientific background, who were asked to check the draft for applicability and transparency. The draft was revised once more and presented to the university's managing director as the principal of the project, who had to be involved for further implementation strategies at our five locations and eleven study programmes. The managing director commissioned a defined group for the further implementation of the project.

Results

The development of the JC concept covered an overall period from December 2016 until July 2018. The present concept for the JC can be considered first as a commitment policy and secondly as a working tool for the JC organization team. The final concept encloses the

following constitutive elements, based on the summarized expert group results: creating a great attractiveness for recruiting more participants, increasing exchange and communication between disciplines and locations by collaborative learning and working, intensifying the cooperation in the area of education and research between the study programmes and finally the development of comprehensive scientific competencies.

The concept provides the broader framework for the methodological and didactical implementation of the JC, e.g. specification of the learning outcomes. The learning outcomes resulted as: a) developing and enhancing reading competencies, b) choosing and applying the suitable critical appraisal tool, c) judging the evidence from a paper's results, d) strengthening the scientific methods competencies, e) transfer of knowledge in respect to external validity and finally f) applicability in daily practice.

The methodological structure reveals a strong conformity with different scientific designs, such as systematic reviews, randomized controlled trials, observational studies and diagnostic studies. The concept illustrates a possible procedure to ensure a successful JC implementation and offers supporting tools e.g. check lists and appraisal tools. Finally, guidance for the preparation, follow-up and evaluation of the JC is provided.

Discussion

The aim of the present project was to develop an interdisciplinary journal club concept at our UAS. Our findings highlight the importance of the following factors: 1) the importance of a JC's defined objectives, 2) a distribution of tasks and roles within the organizational team members, 3) the application of different methods within the methodical-didactic realization, 4) responsibility of the participants, 5) JC's schedule, and 6) a collection of supporting tools. In the following sections these factors will be discussed in detail, emphasized by typical experts groups' comments in italics under quotation marks.

Objectives: It has been demonstrated, that the JC's objectives should be clear and transparent

(29)(30). The new concept defined clear objectives for the JC, i.e. attraction of participants, enhanced communication between locations and study programmes, cooperation between teaching and research and building/improving the personnel's scientific competences. All experts agreed, that a JC needs to be implemented, which should rotate between the university's locations. It will take place four times a year, the group size will be between three and ten persons, as argued by Unterweger (31). The annual programme makes offers for the teaching staff with different degrees of difficulty. The infrastructure (room, w-lan, database access, beamer, etc.) must be provided by the university.

Distribution of tasks and roles: The concept includes a proposal for the possible distribution of tasks and roles of the organization team members (32). The JC model for roles (facilitator, education coordinator, publicist, evaluator), as proposed by Aiello-Laws et al. (33) will be adopted. Smaller roles can be combined, with the facilitator facing the critical and dominant part (3, 34). One expert described it as: *“the facilitator must be really scientifically and methodologically sound”*. The ideally skilled facilitator takes responsibility and is interested in education topics (35) and the advancement of scientific knowledge within the institution (36).

Methodical-didactic realization: Experts agreed on the predefining and evaluation of the yearly sequenced learning outcomes. Special emphasis will be placed on matching disciplines and on the incorporation of different scientific designs: *“It is an important issue to offer the journal club interdisciplinarily”* (expert 1). The acting facilitator chooses, whether the traditional or the Evidence Based Medicine JC (32) method is applied, and if a cross-sectional approach (i.e. comparing certain aspects of two papers) could be suitable.

Participants: Under ideal conditions, they have read the paper in advance (37), which will be distributed two weeks beforehand. Every person is self-responsible for achieving the proposed learning outcomes based on active participation by self-accountable learners, as Bounds and Boone (38) and Price and Felix (30) have argued and was emphasized as follows: *“everybody*

has to contribute something, everybody has to say and should say something, everybody is invited to involve himself actively." (expert 2).

Schedule: Framework conditions were arranged to offer the JC four times a year during working hours. The above described roles are scheduled for regular rotation. The facilitator will give a short summary of ten to fifteen minutes at the beginning to level participants' point of departure (35). A common point of departure is important to facilitate discussion (39). Renko and colleagues (40) have attempted to explain the importance of peer learning. In our opinion participants are peers where the JC constitutes a platform for corporate learning and a continuous exchange to avoid the following statement: *"The first journal club produced the notion, that there is a group of so-called specialists we cannot reach, because we are lacking essential competences"* (expert 3). The organization team members select the appraisal and evaluation tools needed, appropriate to the special requirements of our institution. This group will also collect actual clinical questions, and potential papers to be appraised based on staff proposals: *"With this sort of academic question, which emerges out of clinical questions, one can start a literature research in adequate databases."* (expert 3). Clinical questions arise in two of three everyday patient encounters (41), so enough material should be generated.

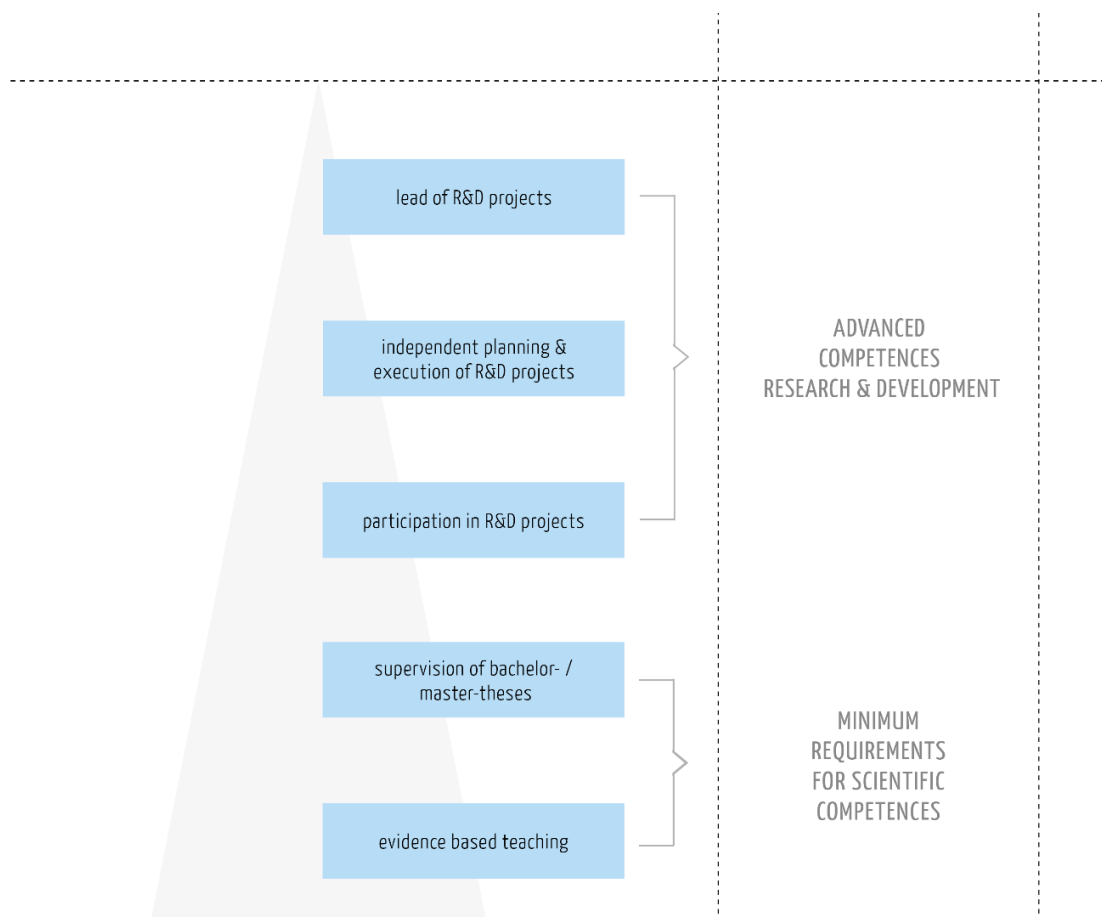
Tools: Appraisal tools support the reader in understanding the meaning of and submerging him/her into the text (42): *"one must really understand the content, reading alone is not sufficient"* and: *"critical appraisal is the crucial step and this needs a certain tool"* (expert 4). The critical appraisal tool depends on the study design and will either be taken out of PEDRO (43) or the CASP tools (25) or other suitable web pages. Furthermore, the Research Report Summary and Critiquing Form (37) seems to be a helpful instrument in appraising and dividing the paper being discussed into meaningful questions. For post-course-evaluation the questionnaire from Vadamparapil (26) was taken into consideration. To match these purposes (44), German translations and a fitting adaptation must be prepared.

Conclusion: This study developed a new JC concept based on the needs and expectations of the university's staff members, with regard to previously published results. The concept was embedded within the UAS's scientific and educational aims. Based on the findings of this analysis the new JC concept was elaborated upon. The JC will be set up four times a year with the focus on skills at different levels, rotation at the university's five locations with a maximum active staff members' participation, including different scientific designs and interdisciplinary topics.

Table 1: Main categories for analysis, Steyr 2017

Nr.	Main categories
1	Policy decision for/against JC
2	Basic conditions
3	University teaching method
4	Distribution of tasks
5	Participants
6	Structure and composition
7	Flow of JC procedure
8	Activities

Figure 1: Basic and advanced competences for teaching and scientific staff. R&D = research & development



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