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Facilitating Professional Vision of Domain-specific Critical Incidents in Religious Education

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Abstract

Simulation is a well-proven teaching method in medical education. In the last decade, there has been an increase in the use of simulation methods in university-based teacher education, often supported by video recordings to reflect simulations. We present a model of simulating content-related pupil disruptions and critical incidents in religious teacher education with the aim of improving professional vision and teacher students' understanding of such incidents and to explore their sequencing of actions and theoretical backgrounds. The simulation includes an expert teacher in the role of the disrupting student, a preservice teacher student in the role of the teacher, and three other teacher students in the roles of surrounding pupils. We examine the relationship between knowledge and action before, during, and after the simulation process. The decisions teacher students in the teacher role make during the simulation strongly influence the actions they take in the simulation process. It is therefore important that student simulators become aware of the consequences of decisions in the teacher role, to gather processual knowledge themselves. The microteaching performance of 25 preservice teacher students was video-recorded in a simulation room (video-laboratory). They also completed paper-pencil pre- and posttests on professional knowledge. Students of a psychology course dealing with disruptions served as the control group (N=18). The findings provide important implications for questions of how to reflect the relationship between knowledge and action and how to support professional vision in the development of content and pedagogical-content competencies at an early stage of professional learning.

Keywords: teacher preparation, theory-practice gap, classroom simulation, video-feedback, content-related learner disruptions

Facilitating Professional Vision of Domain-specific Critical Incidents in Religious Education

Empirical findings suggest that the quality of teaching at schools depends on general pedagogical knowledge, content knowledge, and pedagogical content knowledge (Voss et al., 2014). All aspects can increase competencies for monitoring and facilitating learning processes and help reduce teaching disruptions, constituting the core theme of the presented teacher preparation concept. Neither teaching disruptions nor the ability to see the meaning of teaching disruptions are as transparent as often thought. Therefore, it is necessary to facilitate professional vision of such incidents. Sherin and van Es (2009) describe professional vision as "the ability to notice and interpret significant features of classroom interactions" (p. 22; see also Gegenfurtner et al., 2020). In the present work, we comprehensively reflect on this issue, firstly, by outlining the setting and the course within which we implement professional vision. Secondly, we reflect on the theoretical framework of the course with regard to philosophical and religious underpinnings, which not only concern subject matter, but also aspects of our teacher education approach which surpass general teacher education. Thirdly, we present the findings of a small-scale summative evaluation which highlight the usefulness of our teacher education approach.

1. Professional Vision within the Course "Becoming ReliProfi"

1.1 Theoretical Framework of Professional Vision in and on Action

Baumert and Kunter (e.g., 2013) developed a model of teachers' professional competence, which has four competence aspects: (1) beliefs/values/goals, (2) motivational orientations, (3) self-regulation and (4) professional knowledge. They adopted and broadened Shulman's distinction of three areas of professional knowledge comprising (1) pedagogical knowledge (PK, often GPK for generic/general PK and reconceptualised by Baumert and Kunter into PPK for pedagogical-*psychological* knowledge), (2) pedagogical content knowledge (PCK), and (3) content knowledge (CK). The broadened model was applied within the project "Förderung der Lehrerprofessionalität im Umgang mit Heterogenität" (LeHet,

Facilitating Teachers' Professionalism to Deal with Heterogeneity), which comprises four competence areas for dealing with heterogeneity at schools (cf. Nett et al., 2022). Competence area A focuses on adaptive teaching and includes the course "Becoming ReliProfi". Within the course, a focus is placed on developing *philosophical and theological content knowledge* (PhThCK) as well as *religious pedagogical content knowledge* (RPCK). In terms of differentiating the two content areas, Wood (2022) broadly conceptualized philosophy as "the systematic use of human reason in an effort to understand the most fundamental features of reality" and theology as "the study of God and all things in relation to God" (p. 1). Beyond these differences, there are similarities in the search for meaning. Two core facets of RPCK are subject-specific instruction strategies and knowledge about preconceptions of the learners. However, the use of professional knowledge in concrete teaching situations remains largely unstudied. In these situations, teachers are required to continuously perceive, decide, and act. Expert teachers are those who have developed their expertise in at least ten years of experience in the profession, have sufficient declarative-conceptual knowledge that is differentiated, optimized, and routinized on a case-by-case basis, and perceive domain-specific patterns (schemes) in concrete, lived practice (Gegenfurtner et al., 2020). Compared to experts, novices draw on a smaller number of schemes (cf. Schwindt, 2008), and, due to their lesser experience, use other "cognitive resources for their perception and may be less able to perceive [relevant] content information" (p. 36).

Following the distinction between declarative and procedural professional knowledge (Baumert & Kunter, 2013), we differentiate between professional vision *on* action and *in* action (Schön, 1991). Professional vision *on* action revers to perceiving the teaching actions of oneself (when in the teacher role) or others (when in a pupil role) in video-recordings of the simulations, while professional vision *in* action refers to perceiving the teaching actions of oneself (when in the teacher role) or others (when in a pupil role) during the simulation itself. Perceiving lessons professionally entails to realize their potential ambivalence and

complexity, where teachers should strive to grasp the multi-dimensional bearings of classroom-interaction. To effectively do so, teachers require professional knowledge. In order to introduce teacher students to the complexity of these situations and gradually build up their professional vision abilities, we implement complexity-reduced teaching simulations with expert teachers. In this context, (practicing) professional vision can mediate the relationship between professional knowledge and professional performance of a teacher.

Previous research has suggested that professional vision includes two components: the teacher's abilities to *notice* and to *reason* about relevant features of classroom situations (Seidel et al., 2017). *Noticing* refers to putting forth "selective attention to important classroom events" (p. 95) with a focus on goal clarity, teacher support, and learning climate. *Reasoning* describes the "interpretation of important classroom events" (p. 96) in three steps: (1) description, (2) explanation, and (3) prediction. According to Seidel et al. (2017)

> *Description* reflects the ability to differentiate the relevant aspects of a noticed teaching and learning component (i.e., goal clarity: the teacher refers to what the students should learn), without making any additional judgments. *Explanation* refers to the ability to use conceptual knowledge about effective teaching to reason about a situation. This means classifying and accounting for the situations according to the terms and concepts of the teaching component involved. *Prediction* refers to the ability to predict the consequences of observed events in terms of student learning. It draws on broad knowledge about teaching and student learning, as well as their application to classroom practice. (p. 96)

Preceding these three steps of reasoning, we propose to integrate the step of *impression* (Riegger, 2019a, p. 90). *Impressions* of teaching-actions include emotions and are manifested not only in perceivers' explicit reactions but also in their spontaneous judgements (see Uleman & Kressel, 2013). Thus, teachers and teacher students need to become aware of and process these often affectively loaded immediate impressions influencing their descriptions, explanations, and reasoning to vision and act professionally.

1.2 Teaching-Context at the University of Augsburg

The course "ReliProfi werden" (Becoming ReliProfi) is part of the LeHet project (see full title above) at the University of Augsburg in the context of the "Qualitätsoffensive Lehrerbildung" (Quality Offensive Teacher Education)-a joint funding programme of the federal government and states of Germany. We implement professional vision within case-by-case professionalization in teacher training at the university. We focus primarily on questions of university didactics, in particular the learning of professional vision in concrete theory-practice-related relationships by means of simulation. Simulation-based learning is a widespread method that has been used in medical education for about 30 years. Its effectiveness has consistently been proven in many empirical studies (e.g., Brandl et al., 2021).

In teacher training at the university, research on the use of simulation is still in its infancy (Chernikova et al., 2020). Simulation exercises are characterized as having high potential for effective learning and application of knowledge in realistic situations, and should in turn aid in the development of complex skills (Chernikova et al., 2020). In teacher education, currently investigated simulations are mainly video-based, reconstruction-based, or live (Chernikova et al., 2020). The type of simulation discussed in the present work is innovative and can be described as experience-based simulation. In contrast to solely video-based and reconstructive reflection *on* action or live simulations with trained actors immersing learners into full complexity *in* action, the proposed model implements 'as-if' action in reality-like but complexity-reduced situations in order to habituate *in* action competencies step by step (Heil & Riegger, 2020). The following goals for each individual simulation are regarded as fundamental to build up these competencies.

1.3 The Course: Aims and Objectives

Professional vision is constructed, developed, and further refined within two interrelated processes:

(a) diagnosing and processing heterogeneous, religion-related preconceptions and prejudices, which are the cause of teaching disruptions or irritations, and

(b) combining PhThCK, RPCK, and teaching practice in order to develop, reflect, and conceptually sharpen teaching competences with the help of joint and reciprocal learning of teacher students and expert teachers, the latter simulating learners.

In particular:

- Preconceptions of teacher students (in the teacher and pupil roles) and pupils (simulated by the expert teacher) are linked to teaching content and to developmental-psychologically lower stages of reasoning with limited, inappropriate, or inadequately nuanced understanding of the complex concepts in order to raise these to a level of cognitively more and more broadly comprehensible, technical concepts (individual progress).
- Communication takes place within the teacher student learning group and within the pupil learning groups simulated at the university regarding different pre-concepts and concepts (comparing one's ideas with those of other learners and simulated pupils).
- A criteria-related assessment of the PhThCK- and the RPCK-related-levels is carried out: Criteria are elaborated sub-concepts (e.g., understanding of miracles) of overarching concepts (e.g., Jesus Christ, faith) which are generated on the grounds of PhThCK (e.g., philosophical and exegetical understandings of miracles) and RPCK (e.g., religious developmental-psychological styles).

1.4 Professional Vision within Simulations

The entire simulation takes place in six phases: pre-briefing, briefing, simulation exercise and debriefing (Riegger & Rotthoff, 2022) complemented by private digital debriefing and de-debriefing.

Pre-briefing refers to a compressed lesson preparation for the simulation of a five-minute micro-teaching that will be given by the teacher students on their own. It is centred

around a specific topic given by the expert-teachers (simulating the disrupting pupil by drawing on real-life experiences in their classes). The teacher students have access to suitable PhThCK and RPCK from the lecturer and teaching material from the expert teacher, which the teacher students may, but need not necessarily use.

Briefing is carried out in the context of a co-constructive cooperation between theory (lecturer) and practice (expert teacher). The basic constellation to relate both takes place in such a way that a 'part' of the school classroom, the scenario (= the complexity-reduced and reality-like model of school religious education), is transferred to the university. In micro-teaching, teacher students and an expert teacher simulate this scenario in the media laboratory at the University of Augsburg. In the same way as trainee pilots first experience flight reality in the flight simulator, teacher students simulating school teaching in the university course should feel like teachers in school.

Example: Beyond scripted role-playing games, the open teaching-learning situation contains activating elements for independent action in the simulation (e.g. presentation of a text excerpt from the book "Ich geb dir noch eine Chance, Gott!" ["I give you one chance, God!"] by Gudrun Pausewang). Actors are: One expert teacher in the role of that learner making the disruptive, irritating statement or comment, three teacher students in other pupil roles and--alternating by simulation units--one teacher student in the teacher role.

Simulation exercise refers to the unmediated experience of a teaching disturbance in the simulated, religious education reality. In the role of the teacher the teacher students must react to these disruptions or irritations appropriately and are under pressure. This pressure to act is comparable to that in the reality outside of the simulation. Central are not only general discipline problems, but also disturbances and irritations related to the lessons' content issues. In contrast to the real situation in a school, no real pupil is affected and alternatives for action can be tested in follow-up simulations. Afterwards, they can be reflected on in the debriefing without pressure of action.

Example: An excerpt of an immersive, experience-based simulation from 2019 is outlined. The reading of a text excerpted from a given book is reproduced. The expert teacher in the role of the pupil stops reading aloud and asks the teacher student in the teacher's role: "What is a dead soul? Are they available at the bakery Knoll?" All simulated pupils and the teacher student in the teacher role laugh. As a result, some pupils talk about the bakery Knoll and its many branches. The teacher student in the teacher role ignores the question of the simulated pupil.

Debriefing: The experience of the participants in the simulation is reflected on (Riegger & Rotthoff, 2022).

Example: The teacher student in the teacher role asked if it was unprofessional to laugh in this situation. Reflecting pragmatically, the students in the pupil roles during the simulation did not experience the teacher's laughter as devaluating them, which is why they classified it as unproblematic in terms of professionalism. Even more: By laughing, the teacher showed herself as being human. Reflecting scientifically (evidence-based), the subject-overarching importance of humour in classrooms was emphasized. In order to learn the ability to deal with PhThCK and RPCK in classroom interaction, this teacher student should broaden her attention from subject-independent (pragmatic) aspects of classroom-interaction, such as humour or devaluating students, to those aspects of the situations related to PhThCK and RPCK, e.g., namely the relation the pupil offered between the name of a bakery and the religious term (see below). For these reflections, personal digital debriefing between course sessions is provided.

Private digital debriefing means that the video-graphed simulated teaching scenes are digitally accessible about one week after their recording on a password-protected video-platform (online course laboratory of the Media Laboratory at the University of Augsburg). At home, the participants watch their own videos based on our four steps of professional vision

(impression, description, explanation, and prediction) and choose one scene to present in the next session.

De-debriefing: At the beginning of the next session, the participants present a result of their private digital debriefing, with regard to the professionalization of teachers.

Example: The teacher students themselves did not initiate a content related reflection to the "soul scene". Therefore, the lecturers suggested the following content-related reflection: In parts of southern Germany, "soul" also refers to an elongated white bread. References to the religious understanding of soul are very likely (Hartinger, 1993). In the Middle Ages, poor people prayed for the souls of the deceased richer people to go to heaven. As 'payment', the poor received this elongated bread, called "soul". With this explanation, the teacher could take the pupils' comment seriously and take up the preconception of the pupil (Bederna, 2017).

Overall, the professional vision in the experience-based simulation takes place first *in* action and then *on* action. This is a supplement to the training of professional vision by video-graphed lessons.

2. Theoretical Basis

How can learning results of the described procedure be empirically proven regarding professional vision? For example, empirical measurement methods via the video recordings would be possible, i.e., coding teacher students' actions in the teacher role. An intervention study with scripted pupil behaviour could also be helpful. However, a general weakness of such studies are the limitations of the designs, in which the learning results would have to be attributed solely (a) to observed behaviour without information about concept learning or (b) to the type of intervention in question. Instead of assessing rote learning of recipes to deal with individual teaching disruptions influenced by unique procedural factors we decided to capture an aspect of teacher students' development which provides them with professional knowledge on the basis of which they may generalize (appropriate) decisions and actions across single disrupting incidents, namely their understanding of the religious concept

"miracles" (PhThCK). The more elaborate and developed teacher students' and teachers' comprehension of this concept (but also other concepts) is, the more flexible they may utilize disruptions as starting points for deep inquiry of their pupils into the complexity of religious thinking, reasoning, and feeling, the core of religious education (that specific amalgam of PK and PhThCK in RPCK). Therefore, in the following, our understanding of miracles (2.1), and the theoretical background of the course are clarified (2.2).

2.1 Exemplary Understanding of Miracles

The word "miracle" is used colloquially, but also as a technical term in theology and religious studies. According to Johann Baptist Metz (1981) religion can be understood as interruption of everyday life. Following this comprehension, we understand miracles as interruptions of so-called common sense which are personally experienced as having life-enhancing effects. In this sense, a miracle constitutes an "exemplary" (Klafki, 1961, p. 131, 135) of religion, the individual case of an interruption of everyday life representing large areas of the Christian faith. Consequently, experiences with clearly life-enhancing quality inhere in Christian Faith. Within this topic, two relations are particularly important (Riegger, 2021): the relation between (a) objective and subjective, (b) general and special. Regarding the former, through miracles, something new can come to consciousness for a person; a subjective experience of an objective Christian message as present and effective for oneself. Regarding the latter, special (subjective, individual) understandings of miracles represent the generality of faith, without excluding the profane or secular life outside the realm of faith. Thus, an interruption can take place in the frame of reference of faith and in a secular one. Interpreting the experience of the interruption in reference to the religious framing can be called truth(s) of faith; interpreting it in reference to a secular frame can be called personal meaning.

According to Charles Taylor (2007), modern, secular societies largely follow a rationality oriented towards the enlightened sciences. From a reception perspective, an

interruption of everyday life could mean a "disclosure experience, i.e., an experience in which a larger context suddenly and surprisingly becomes apparent" (Riegel, 2021, p. 38). In this context, an individual's cognitive horizon of comprehension certainly is formative (Riegel, 2021, Chapter 2). In modern, secular societies, the transition from a literal to a symbolically narrative understanding of a miracle in the frame of faith is a critical event for pupils, and, we assume, as well for teacher students. According to Riegel (2021), also a natural-philosophical understanding is formative in our societies. Yet, the explanatory patterns remain "tied to modern sciences" (p. 74). Thus, miracles are explained via natural, psychological, sociological, or historical conditions "without drawing on a divine reality – but also without necessarily contesting a divine reality" (p. 74).

Summing up, we systematize the definitions of miracles (as interruptions of common sense) by categories specifying the frames of interpretation (religious/non-religious or profane) and the scopes of scientific reference (narrow/wide) (see Table 1).

Table 1

Miracle terms representing definitions

Frames and scopes of interpretation	Narrow	Broad
Religious/ theological	a) God‘s intervention as a breaking of the laws of nature	b) God also reveals His work within the laws of nature.
Non-religious/ profane/ secular	c) Event that eludes (scientific) explanation	d) Extraordinary, unexpected event in which something changes for the better

The religious interpretation understands the unusual event as an effect of God or Jesus, in which (a) natural laws are broken (narrow understanding/supranaturalistic explanation) or (b) God's or Jesus' work takes place within the laws of nature (broad understanding/rationalistic explanation) (Schreiber, 2018). For the non-religious

interpretation, God plays no role, whereby the event (c) eludes a (natural) scientific explanation (e.g. coincidence: narrow understanding), or (d) turns something for the better (e.g. surviving a serious accident: broad understanding). The narrow concept of miracles contradicts the scientific world view and rational thinking. The broad concept of miracles is located in a modern, scientific world view, and allows religious or theological interpretations. Against the background of this understanding of miracles, we developed specified items for our questionnaire.

2.2 Theoretical Background of "Becoming ReliProfi"

Teaching disruptions or irritations: What not only teachers, but also pupils, find disturbing or irritating is always perceived subjectively. Nevertheless, it is undeniable that there are many teaching disruptions in every learning group. Three forms that influence the teaching-learning process are particularly relevant to our context: subject-independent disruptions; content-related or religion-related teaching disturbances (Riegger, 2019b, chapter 10); and educationally relevant irritations (e.g., the pupil statement "Jesus sucks!")

Prejudices are, according to Gadamer (2013), "fore-meanings that are not borne out of the things themselves" (p. 280) ["Vor-Meinungen …, die sich nicht an den Sachen selbst bewähren", dt. Gadamer, 1990, 272)]. This is a hermeneutical understanding of prejudice. Although Gadamer's often synonymous use of prejudice and preconception is criticized within philosophy (Kühne-Bertram, 2001), it offers pedagogical connections and tends to converge with the understanding of preconceptions from a content and pedagogical content perspective.

Preconceptions of learners (teacher students at university as well as pupils in school) are already existing ideas about phenomena, processes and concepts, which they construct within the framework of their cognitive possibilities and on the basis of their own (pre-teaching) experiences and considerations (Baar, 2017). In religious education, this topic is primarily discussed through developmental psychology (Büttner & Dieterich, 2016).

3. Evaluation

Evaluation of the simulation model targeted teacher students' concepts, skills, and religious education teacher self-images. These are conceived as prerequisites of professional vision– and action–to handle content-related disruptions and to utilize critical incidents as learning opportunities for pupils, in particular to activate deep inquiry and reasoning of learners. Effects of the courses were tested with a quasi-experimental pre-post-control-group design. The control group consisted of teacher students in a course on classroom disruptions, teacher-student-interaction, and dealing with diversity based on theoretical principles and materials of the "Konstanzer Trainingsprogramm", a six months on-the-job training to improve teachers' competencies to handle aggressive and disruptive student behavior. Similar to the simulation concept, this course employs intensive casework and self-reflection including one unit of simulating self-experienced disruptions (e.g., in private lessons with learners). However, the control-group course is part of a general module for teacher students of all subject areas. Consequently, students in this group did not reflect on domain-specific concepts (i.e., PhThCK), teaching strategies, learning opportunities (i.e., RPCK), or their role in and for disruptions, which is the core focus of the simulation model. These differences in course concepts led to the following hypotheses for the evaluation study:

(1) Participants in the simulation group develop a broader conception of specific religious terms than the participants in the control-group (facet of PhThCK).
(2) Participants in the simulation group evaluate didactical concepts and strategies for religious education and approximate their future students' religious thinking more adequately than participants in the control-group course (facets of RPCK).
(3) Participants in both groups develop higher communication and higher perspective-taking skills and more empathy (facets of PPK).

3.1 Samples

The compared courses entailed 43 students in total, 25 of which participated in the simulation courses (one group of 6-7 participants per semester) and 18 of which participated in one control-group course during the first semester of the evaluation study. Selection of courses and participation in the evaluation study were optional. While teacher students' mean age and gender showed no differences between the groups, they differed on measures of their studies (see Table 1). These differences were expected, as the design compared subject-specific courses in advanced phases of teacher studies with a course from a general module for all teacher students proposed for early phases of their studies, notably also including 5 students of religious education.

Table 1.

Description of the sub-samples and difference testing (T-tests and Chi^2-tests)

	Becoming ReliProfi	Control-group course	*p*
N	25	18	
Mean age (Standard deviation)	23.8 (3.5)	22.3 (3.9)	n.s.
Semester (Standard deviation)	6.5 (2.1)	2.9 (1.1)	< .001
	Distributions in percentages		
Female	75	83	n.s.
Primary school studies	20	50	< .05
Secondary low track studies	52	22	< .05
Secondary medium track studies	8	28	n.s.
Secondary high track studies	20	0	< .05
Religious education studies	96	28	< .05

3.2 Measures

An instrument tailored to the aims of the simulation model was developed, as currently available validated instruments to assess religious education competencies of (pre-service) teachers either focus on other, a too broad range of competence aspects, or employ methods not suitable for the course context (cf. overview and discussion of instruments in Fricke, 2017). A facet of students' PhThCK was assessed with 18 statements following the narrative of Bartimäus (Markus 10, 46–52, revised standard translation 2016) (e.g., "The miracle is the faith of Bartimäus before his healing").[1] The statements represent three types, i.e., developmental stages, of conceptualizing the religious term "miracle"[2]: (A) literally-magical; (B) distancing-rational; (C) integrating A and B. Participants were asked to indicate agreement on a 4-point Likert-scale (*is not true*, *is rather not true*, *is rather true*, *is true*). Items for facets of students' RPCK covered (1) evaluating a didactical element to attune learners to the miracle narrative (*appropriate/inappropriate*) followed by open ended reasoning on appropriateness and learner reactions, (2) two open-ended questions on one's own reactions to critical incidents of classroom interaction (one as teacher, one as learner), (3) knowledge of learner thoughts and beliefs ("Please approximate how many learners of a $4^{th}/5^{th}$ grade classroom hold the following views", e.g., "The teacher tells us what the clergy wants, not what he/she believes") with 8 items on a 5-point Likert-scale ranging from 1 = *0 %* to 5 = *100 %*, and (4) estimating learner predisposition (e.g., "Learner wants to be seen as cool") motivating a specific disruptive contribution ("I believe in beer and its exhilarating effects …") on a 4-point Likert-scale (*is not/rather not/rather/true*). Communication skills as a facet of PPK were assessed with statements addressing three qualities: perspective taking, empathy, and differentiation between self and other using 7 items with a 5-point Likert scale ranging from 1 (*applies not at all*) to 5 (*applies completely*), e.g., "I can accept the coexistence of own views and differing views of others". Additionally, information about

[1] Two items were excluded from analyses because of kurtosis, skewness, and item-scale inconsistency.
[2] Fricke (2017) points to learner questions concerning miracle narratives challenging teachers' content knowledge.

studies (subjects, duration, practices) and background (language, origin, religious affiliation) was collected. The instruments were administered at the beginning of the first and at the end of the last course unit.

Open-ended answers were coded on the basis of a priori theoretical criteria underlying item construction.[3] Missing data were estimated with the expectation maximization algorithm in SPSS. For ordinal agreement values to the miracle-concepts, IRT-person parameters were estimated with WinMira (Davier, 2001) showing Rasch-conform response patterns (Q-Index) and acceptable goodness-of-fit tests (Bühner, 2011). However, item-fits and scale consistencies for RPCK- and PPK-facets differed considerably across measurements. Control analyses yielded significant differences of response patterns and changes therein to some items dependent on future educational subjects (with vs. without religious education) and course conditions, suggesting that these items were particularly sensitive to students' conceptual changes and course contents. Hypotheses were tested with repeated-measures analyses of variance for within- and between-subjects effects (2x2).

3.3 Results

Hypothesis 1: Students' agreement to statements representing a literally-magical miracle-concept (A) showed no differences between groups and no changes across a semester. To statements representing a distancing-rational miracle-concept (B) teacher students in the simulation course ReliProfi agreed more strongly in pre- and post-tests (Main effect: $F_{1,41}$=7.315; η^2=.15; p=.01). Agreement to statements representing an integrated comprehension of the religious term "miracle" (C) showed a main effect of the conditions ($F_{1,41}$=4.523; η^2=.10; p<.05) and an interaction effect of conditions with measurements ($F_{1,41}$=5.705; η^2=.12; p<.05). Students in the simulation course agreed more strongly in pre- and post-test and exhibited an increase in agreement from pre- to post-test.

[3] Likely due to tersely formulated scoring criteria, interrater-reliability with an independent rating of a non-expert student was insufficient for some items (.51-.98).

Hypothesis 2: The analysis of the coded answers to the didactical element to attune learners to a unit on the religious term "miracle" (RPCK facet 1) may indicate an interaction effect. However, barely sufficient Cronbachs Alpha (.67/.67), partially insufficient interrater reliability, and (not yet corrected) coding-inconsistencies rule out reporting results in detail. Students' approximations of learner views pertaining to the (self-)image of religious education teachers (see example item for knowledge of learner thoughts and beliefs, RPCK facet 3) developed in opposite directions (Interaction effect: $F_{1,41}$=4.759; η^2=.10; p<.05). In the pretest, participants of the simulation course showed more inadequate, and participants of the control-group more adequate approximations; in the post-tests approximations of these learner beliefs were evenly adequate and inadequate in both courses. Estimations of learner predisposition motivating a disruptive contribution (RPCK facet 4) showed no differences between courses and no significant developments.

Hypothesis 3: Aggregated measures of communication skills showed no differences between groups and no significant changes. However, students in both groups seemed to accept the coexistence of 'the own' and 'the different'[4] even more after courses (Main effect: $F_{1,41}$=3.856; η^2=.09; p=.05), despite skewness to agreement in both measurements.

3.4 Discussion

Hypothesis 1: The increase of teacher students' agreement to more sophisticated miracle concepts (Type B and C) in the simulation courses indicates conceptual changes, i.e., development of prerequisite PhThCK, and confirms the hypothesis. The unchanging approval of statements representing a profane understanding of miracle (Type A) accords with studies reporting a coexistence of (erroneous) lay preconceptions and correct scientific conceptions in individual thinking and reasoning (Büttner & Dieterich, 2016). Moreover, it is in line with the aim of broadening the horizon of possible conceptualizations. Furthermore, against the

[4] The German terms „Eigenes" and „Fremdes" encompassing opinions, beliefs, values, norms, etc. have no correspondence in English.

backdrop that acting under pressure rather elicits habitual thought and reaction patterns (e.g., Wahl, 1991), teacher students at this stage of professional development may regress to their preconceptions in critical incidents and fail to transform disruptive learner contributions into learning opportunities, even though their professional knowledge, vision, and action repertoire developed.

Hypothesis 2: Teacher students' RPCK developed only on one of several facets significantly, namely, their approximation of students' thoughts and beliefs concerning themselves as (future) religious education teachers. Although other facets captured with the assessments were also addressed in the courses, this facet specifically taps into learning gains from personal experiences as religious education teachers and intensive reflection on these experiences safeguarded by the intercommunion of scientific and practice experts, the core aim of the simulation model. The hypothesis was only partially confirmed, but notably regarding the central idea of the simulation model.

Hypothesis 3: The result that the development of communication skills did not differ between the two groups confirms the hypothesis. However, communication skills did not change at all, except for a tendency in both groups to accept the coexistence of one's own and other opinions, values, etc. even more at the end of the courses. This result may be due to the wording of four of the seven statements which addressed communication with close friends in (more or less) symmetric relationships, while both courses focused on communication structures in the asymmetric relationship of teachers and learners.

Hypotheses to test effects of the simulation model in comparison to the control-group course, the latter broaching classroom disruptions in general, differentiated the teacher knowledge areas introduced by Baumert and Kunter (2013) and were confirmed concerning core methods and objectives of the simulation model. Tailoring the instruments seemed useful to some extent, but some methodical shortcomings complicated the analyses and limit interpretation of the results. Taking into account sample statistics, further evaluation studies

may profit from a three-group design including comparisons of the simulation model with other religious education courses. Lastly, we should not expect a single course to effect “the miracle” of a metamorphosis from novice to expert within one semester, though it may occur.

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