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Generic vs. Modality-Specific Competencies for K-12 Online and Blended Teaching

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Although research has explored teacher competencies in K-12 blended and online learning, it has not specified which competencies are appropriate to an online or digital medium, which refer to blending in-person with online experiences, or which are generic—applicable in any teaching modality. This article explores selected K-12 online and blended teaching competency documents to determine which specific modalities (online, in-person, blended, or generic) the competencies address. Many competencies are still categorized as generic, and not specific enough to denote a particular context. The authors give recommendations for pre-service teacher education and indicate needs for further research in K-12 online and blended teaching.

The number of full-time students enrolled in blended or online schools is increasing: between 2014 and 2015 blended school enrollment rose by 40%, and full-time virtual school enrollment increased by 6.5% (Molnar et al., 2017). Preparing teachers for these environments is of concern to many (Foulger, Graziano, Schmidt-Crawford, & Slykhuis, 2017; Pulham & Graham, 2018).

Our research interests leading to this study began several years ago when the Utah State Board of Education updated teacher licensure requirements to include coursework preparing candidates "to teach effectively in traditional, online-only, and blended classrooms" and "to facilitate student

use of software for personalized learning" (Utah Administrative Code R277-504-4.C.3.c-f, n.d.). We were allotted limited space in our university's already loaded educator preparation curriculum to address this new requirement. Thus we conducted a systematic review of the literature endeavoring to identify the core teaching competencies and found only limited research (Pulham & Graham, 2018). Aware of the development trends of blended and online learning in K-12 contexts (Dzubian, Graham, Moskal, & Norberg, 2018; McAllister & Graham, 2016; Molnar et al., 2017), we realized that with the increase in blended and online teaching, many teacher preparation programs, school districts, and schools would need to establish courses and professional development to prepare their teachers for such contexts.

Researchers in blended and online learning continue to affirm that the skills appropriate to each are unique (Barbour, Siko, Gross, & Waddell, 2013; Davis & Niederhauser, 2007; Pulham & Graham, 2018). Several have expressed concern that research on teacher competencies does not distinguish between those unique to online environments (e.g., facilitating online asynchronous discussion) and those applicable to any teaching environment (e.g., providing useful feedback on assignments; Barbour et al., 2013; Molnar et al., 2017). Barbour et al. (2013) discussed three difficulties with implementing K-12 online teaching competencies:

1. Identifying essential online teaching skills
2. Validating skills through empirical research
3. Translating skills into a pre-service teacher curriculum

Similar issues apply to blended teaching competencies, particularly problematic because blended teaching is becoming "the new normal" in education (Norberg, Dzubian, & Moskul, 2011). Teacher educators must understand what distinguishes competencies specific to blended and online learning from those useful in any environment?

Research Questions

This study is intended to analyze selected K-12 blended and online teaching competency documents to discover (a) which competencies are specific to an online/digital context, (b) which are specific to blending online and in-person learning, (c) which are specific to an in-person context, and (d) which are generic (applicable in any modality). More specifically, we addressed five primary questions:

1. What proportion of competencies in the documents are applicable for:
    a. teaching in an online or digital context,
    b. blending online and in-person learning,
    c. teaching in an in-person context, or
    d. teaching in any context?
2. Which competencies in the documents apply specifically to teaching in an online or digital context?
3. Which competencies in the documents apply specifically to blending online and in-person instruction?
4. Which competencies in the documents are specific to in-person teaching?
5. Which competencies in the documents are generic enough to apply across teaching modalities?

BACKGROUND

Background information based on the authors' previous work provides continuity for the conceptual framework of this study (Graham et al., 2017; Pulham & Graham, 2018). Figure 1 and Tables 1-2 represent four categories of learning interactions that help clarify the distinctions between *online teaching*, *blended teaching*, and *technology integration*. Learner-human interaction (e.g., communication between teachers and students or between students and other students) and learner-content interaction (e.g., reading a book or interacting with online content) are represented on the left and right sides of the matrix, respectively (Anderson, 2008; Moore, 1989). The bottom half of the Figure 1 matrix represents interactions without digital technologies, commonly used in a traditional in-person only classroom. The top half represents a new class of interactions involving digital technologies. Blended teaching skills integrate interactions represented in all four quadrants, whereas in-person instruction does not require digital interaction, and online instruction does not require non-digital interaction.

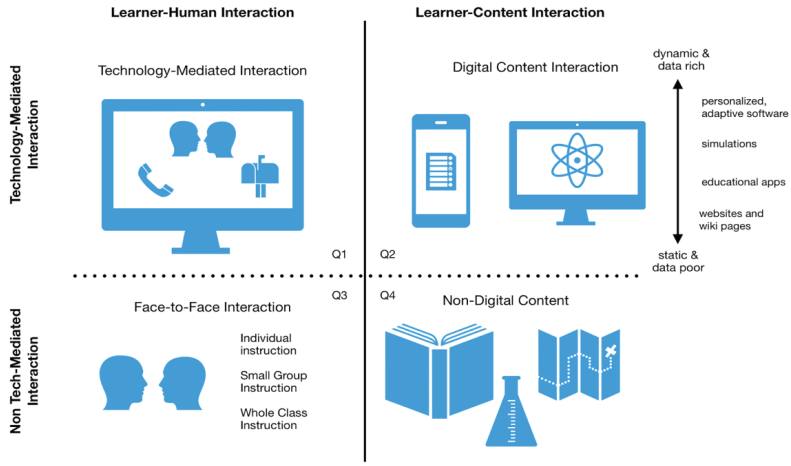

Figure 1. Blended teaching matrix identifying the four categories of interactions involved in blended learning (Graham, Borup, Pulham, & Larsen, 2017).

Table 1

Description of Interaction in Four Quadrants

Quadrant	Description of skills in each quadrant
Q1	This quadrant requires the skills for teachers to conduct online interaction with a student or facilitate meaningful online interactions between students. Interactions in this space can happen either asynchronously or synchronously and at low or high fidelity (e.g., text-based vs video).
Q2	This quadrant requires skills of working with digital tools and content. Digital content is increasingly dynamic and data rich, which requires increasing skills related to working with real-time data generated by adaptive or personalized learning software.
Q3	This quadrant requires skills for participating in in-person teacher-student interactions and for facilitating student-student interactions in whole class and small group contexts.
Q4	This quadrant requires the ability to use and manage traditional classroom-based materials.

Note: See Figure 1; see Graham et al., 2017

Table 2

Description of the General Teaching Skills Needed for Teaching in Three Modalities

Teaching modality	Quadrant skills	Definition/ description
In-person teaching	Q3 + Q4	In-person teaching has traditionally involved Q3 + Q4.
Technology integrated teaching	Q2 + Q3 + Q4	Technology integrated environments add some digital content and resources (Q2) to the in-person teaching context.
Online teaching	Q1 + Q2 + (Q4)	Online teaching primary involves Q1+Q2. However, occasionally non-digital content (Q4) (physical textbooks, science kits, etc.) are still used in an online teaching context.
Blended teaching	Q1 + Q2 + Q3 + Q4	Blended teaching requires teachers to have skill sets in all four quadrants. Blending requires a combination of in-person and online teaching skills.

Note: See Figure 1, adapted from Graham et al., 2017.

LITERATURE REVIEW

In general the literature agrees that online, blended, and in-person teaching are different, but few research articles hone in on specific differences. Milrad, Spector, and Davidsen (2003) stated that "instructional technology changes what teachers and learners do and can do" (p. 13). Teaching practice changes with the introduction of technology, but how technology is incorporated and to what extent will determine the way teaching practices change.

Often online and blended teaching are treated as being the same, but they are not (Pulham & Graham, 2018). Many "online" programs are actually blended because they incorporate some in-person teaching elements (Freidhoff, Borup, Stimson, & DeBruler, 2015; Means et al., 2010, 2013; Watson, Murin, Vashaw, Gemin, & Rapp, 2011). Barbour et al. (2013) indicated that the existing overlap of skills for online and in-person teaching is mostly surface level, that in-depth examination shows differences in many of the skills required to use each modality effectively.

A literature review by the authors (in press) found different emphases in the skills indicated for online and blended teaching. While both emphasize personalized learning, literature on blended teaching competency

mentions mastery-based learning far more than literature on online teaching competency, and online teaching competencies emphasize instructional design much more than blended teaching. For example, Horn and Staker's (2014) definition of the blended context includes characteristics of mastery-based learning such as "some element of student control over time, place, path, and/or pace" (p. 34). These features are not necessarily guaranteed or desirable in an online learning context; as mastery-based learning was among the least-mentioned concepts in online teaching competency literature (Pulham & Graham, 2018). Brodersen and Melluzzo's (2017) analysis of 17 studies found that online and blended teachers communicated with students differently: online teachers used phone or email, while blended teachers communicated only in person, despite having access to online student achievement data. Online and blended programs were also found to provide varying levels and kinds of student differentiation options.

Very little literature explicitly states differences between competencies specific to online and blended environments versus competencies generic enough to be good for a teacher in any environment. The International Board of Standards for Training, Practice and Instruction (IBSTPI) says that teacher competencies are similar enough for online, blended, and in-person environments that all of their competencies are generic (Klein, Spector, Grabowski & de la Teja, 2004). Barbour et al. (2013) would argue differently; until strong empirical research is available to support online teaching principles, some "teacher preparation programs may do more harm than good by teaching pre-service teachers faulty methods for teaching courses online" (p. 63). This would indicate the importance of distinguishing competencies that are specific to online settings rather than lumping all good teaching competencies into one group or assuming that a desirable competency for an in-person class is also desirable for an online class.

The authors' literature review searched ERIC, Google Scholar, and the internet to find online and blended teaching competency documents for K-12 teachers. They identified white papers and reports (Bakia, 2011; Dawley, Rice, & Hinck, 2010; National Education Association, 2006; Oliver, 2014; Powell, Rabbitt, & Kennedy, 2014; Southern Regional Education Board, 2006; Staker, 2011), books and book chapters (Arney, 2015; Barbour et al., 2013; Tucker, 2012), a website (The Learning Accelerator, n.d.), and published research articles (Archambault, DeBruler, & Friedhoff, 2014; Bjieki et al., 2010; diPietro et al., 2008; Ferdig et al., 2009; Kennedy & Archambault, 2012; Oliver & Stallings, 2014). A compilation of the majority of the research and findings showed two trends: (a) most research on blended teaching competencies does not explain how the competencies are developed, and (b) much more research has been published in peer-reviewed

journals for online teaching than for blended teaching competencies. This literature review was limited because it sought research only for K-12 teachers; higher education and corporate training are much more prevalent in the blended teaching literature (Halverson, Graham, Spring, & Drysdale, 2012). Oliver and Stallings (2014) included higher education teaching practices in their research article concerning K-12 teachers due to the lack of research on teaching in K-12 blended environments.

In summary, the literature suggests that online, blended, and in-person teaching require different competencies, but little has been done to differentiate them. Some sources combine online and blended competencies as if they require the same skill sets (Archambault et al., 2014). The authors' prior literature review (in press) discovered that online and blended teaching competencies have distinct emphases. The differences distinguishing modalities need to be identified if teacher training and development are to center on competencies. Identifying such differences is the purpose of this study.

METHODS

With two exceptions, the documents in this analysis were from the authors' review of K-12 online and blended teaching competencies (in press). Eight documents were chosen based on the comprehensiveness of competencies and diversity of ideas discussed in each. We consulted four prominent researchers in the field of K-12 online and blended learning concerning the documents we had included, to ensure that we had not missed any important competency documents they recommended. We selected four documents on blended teaching competency for analysis: (a) iNACOL's Blended Learning Teacher Competency Framework (Powell et al., 2014), (b) Oliver's Framework for Blended Instruction (Oliver, 2014), (c) The Learning Accelerator Practices (The Learning Accelerator, n.d.), and (d) Preparing Teachers for Blended Environments (Oliver & Stallings, 2014). We also selected four documents focused on online teaching competencies: (a) Going Virtual! Report (Dawley et al., 2010), (b) iNACOL's National Standards for Quality Online Teaching (iNACOL, 2011), (c) Best Practices in Teaching K-12 Online: Lessons Learned from Michigan Virtual School Teachers (DiPietro et al., 2008), and (d) Virtual Schooling Standards and Best Practices for Teacher Education (Ferdig et al., 2009).

We analyzed two additional documents: the 2017 and 2008 versions of the International Society for Technology in Education (ISTE) Teacher Standards. Although these documents use neither *blended* nor *online* as a specific modality designation, both contain standards that are widely used and

shared in teacher education and professional development related to technology integration and thus were relevant to our analysis.

Analysis Procedure

Table 3 displays descriptions for the four mutually exclusive codes we created to analyze the context of the identified competencies, which relate to the four modalities (a) online/digital teaching, (b) in-person teaching, (c) blended teaching, and (c) generic teaching.

Table 3

Codes and Definitions for Blended and Online Teaching Competencies

Code	Definition
Generic	Competencies in this category could apply to teaching in any modality: online, in-person, or blended (e.g., motivate students, ensure student collaboration, accommodate diverse student learning styles, provide appropriate academic credentials)
OL/digital	These competencies are specific to an online environment or a purely digital skill (e.g., facilitate online discussion, establish expectations for timely online responses from students, or create playlists of learning activities), whether a web-based program or local software.
In-person	These competencies are is specific to an in-person environment (e.g., manage classroom equipment, prepare students to use digital resources in the classroom)
Blended	This category includes competencies that integrate in-person and online components (e.g., use wikis and discussion boards in online modes to foster collaboration along with group work in in-person modes)

Initially two researchers coded each competency statement in the ten source documents (N=578) into one of the four categories. The principal researcher coded them in context as they were written in the body of the documents. A second researcher coded statements out of context as phrases or sentences not connected to the documents. Initially the coders had 81% interrater agreement. All codes that disagreed in the initial coding were revisited and discussed until 100% agreement was reached, which we believe represents a good-faith effort to make findings more trustworthy.

If competencies used language such as “the online teacher will” (iNACOL, 2011), we considered whether the word clearly designated a skill that

an in-person teacher would not need. If this analysis identified a context-specific skill, we approached the competency in the online/digital category; however, if the skill would be applicable to online or in-person teaching, we considered it to be generic. For example, providing "online feedback" is not sufficiently different from providing in-person feedback to warrant being specified as an online competency. Yet fostering "online discussion" does require a different skill set than fostering "in-person discussion," therefore warranting classification as an online competency.

As with the online competencies, we considered whether use of the word *blended*, such as "the blended teacher will" or "in a blended environment," significantly changed the skill from a generic category applicable to either an online or in-person competency to an exclusively blended competency. If the word *blended* did indicate specific application, such as a "blended classroom" being inherently different than a "in-person classroom," we classified the competency as *blended*.

Limitations

This analysis is not without limitations. Variances in language and perceived meaning of competencies can be difficult when the coding scheme was built to be mutually exclusive. For example, a few competencies targeting data usage and interpretation required judgment calls to code items as an *online* or *in-person* competency, while others were deemed applicable to either setting. For example, the researchers decided to use the word *data* as a generic term, and the phrase *real-time data* as a term specifying data provided through a digital program.

Another limitation to be acknowledged is the scope of the literature analyzed. The literature review conducted by the authors (in press) specifically documented insufficient research on K-12 blended teaching competencies and generally deficient research on blended learning at the K-12 level—as has been noted by other researchers (Halverson et al., 2012). We hope that this analysis provides some insights that will be useful to future efforts in blended teaching research and practice.

FINDINGS

Table 4 reports the final count of the mutually exclusive codes. The top four rows show the blended documents with their code break down, the second two rows contain ISTE competencies from 2008 and 2017, and the bot-

tom four rows show online teaching documents with their code breakdown. Table 5 describes the coding breakdown across document type.

Table 4

Analysis of Blended and Online Teaching Competency Documents for Skills Specific to Online, In-Person, and Blended Teaching

	Generic 330 (57%)	**OL/digital** 172 (30%)	**In-Person** 29 (5%)	**Blended** 47 (8%)
Blended teaching competency documents				
iNACOL Framework for Blended Learning Teacher Competencies (Powell et al., 2014)	29 (71%)	5 (12%)	0	7 (17%)
Oliver's Framework for Blended Instruction (Oliver, 2014)	35 (71%)	8 (16%)	0	6 (12%)
Preparing Teachers for Blended Environments (Oliver & Stallings, 2014)	17 (47%)	8 (22%)	1 (3%)	10 (28%)
Learning Accelerator (n.d.)	99 (59%)	26 (15%)	28 (17%)	16 (9%)
ISTE (technology integration) documents				
ISTE 2017 Standards	11 (44%)	13 (52%)	0	1 (4%)
ISTE 2008 Standards	9 (35%)	13 (50%)	0	4 (15%)
Online teaching competency documents				
iNACOL Online Teaching Competencies (iNACOL, 2011)	71 (59%)	50 (41%)	N/A	1 (<1%)
Virtual Schooling Standards and Best Practices for Teacher Education (Ferdig et al., 2009)	27 (82%)	6 (18%)	N/A	0
Going Virtual! (Dawley et al., 2010)	14 (35%)	26 (65%)	N/A	0
Best Practices in Teaching K-12 Online: Lessons learned from Michigan Virtual School Teachers(DiPietro, 2008)	18 (49%)	17 (46%)	N/A	2 (5%)

Note. Blended learning integrates online and in-person instruction

Table 5

Breakdown of Coding Between ISTE Documents, Blended Competency Documents, and Online Competency documents

	Generic	OL/Digital	F2F	Blended
ISTE	20 (39%)	26 (51%)	0	5 (10%)
Blended	180 (61%)	47 (16%)	29 (10%)	39 (13%)
Online	130 (56%)	99 (43%)	n/a	2 (<1%)

The following section includes four tables (Tables 6-9) with representative examples of competencies from the various documents included in the analysis. These samples were chosen as clear, concise, and representative of the code.

Table 6

Examples of Online or Digital-Specific Competencies

Source	Online or digital competency examples
Learning Accelerator (n.d.)	"Inputs and reviews behavioral data through [an online tracking system]" (Common Behavior Management Techniques, para. 4) "[Using] content tools: IXL, ReadingPlus, Write to Learn, Lexia, Duolingo, SRI" (Lindsay High School Software Suite, para. 1) "Posts mastery videos in resource bank for other students to use" (Mastery Videos, para. 3) "Create[s] playlists of content from a variety of digital sources" (ReNEW DTA Software Suite, para.1)
Oliver's Framework (Oliver, 2014)	"Promotes a secure and engaging digital learning environment" (p. 2) "Models consistent use of organizational policy and procedure as they relate to digital media" (p. 4) "Tools or other resources required for viewing course content are provided along with instructions for how to use and install them" (p. 10)
Preparing Teachers for Blended Environments (Oliver & Stallings, 2014)	"Using the online medium to connect students not only to the teacher and to each other but also to groups or businesses outside of the classroom" (p. 67) "Providing forums in which students can pose questions for the instructor or peers to answer" (p. 68) "How to structure and facilitate online discussions to promote cognitive processing" (p. 69)
Going Virtual! (Dawley et al., 2010)	"Psychology of online learning" (p. 24) "Effective asynchronous discussion" (p. 25) "Effective synchronous facilitation" (p. 25) "Managing groups and collaboration in the online classroom" (p. 25) "Digital etiquette and responsible behavior"(p. 28)
Best practices in Teaching K-12 Online: Lessons Learned from Michigan Virtual School Teachers (DiPietro et al., 2008)	"Teachers are interested in and enjoy exploring new technologies that have potential value for virtual school environments" (p. 17) "Use strategies to address inappropriate or abusive behavior of students in public forums of the course" (p. 19) "Interact with students using multiple channels of communication (telephone, IM, etc.)" (p. 25)

Table 7

Examples of Blended Teaching Competencies from the Literature

Source	Blended competency examples
iNACOL Blended Learning Teacher Competency Framework (Powell et al., 2014)	"Apply lessons and takeaways about their own experiences as learners, both online and offline, to their work with students" (p. 11) "Establish and maintain open communication channels, online and in person, with students, educators, and other stakeholders to support student learning" (p. 11) "Understand and manage the face-to-face and online components of lesson planning and organization within a blended course" (p. 12) "Develop, practice, model, and embody respectful behaviors in both face-to-face and online learning environments" (p. 12) "Use learning management system and/or other online collaborative tools to organize and manage the blended learning environment" (p. 12)
Oliver's Framework (Oliver, 2014)	"The instructor combines strategies from both the digital and traditional environments to motivate learners" (p. 5) "The instructor plans the integration of technical resources and digital content into the curriculum in order to achieve specific learning goals and outcomes" (p. 7) "The instructor takes into account the needs of the learners as an audience when designing curriculum by providing consistency through an organized classroom in order to minimize extraneous confusion that may exist in a blended environment as a result of multiple simultaneous activities" (p. 9)
Preparing Teachers for Blended Environments (Oliver & Stallings, 2014)	Consider whether blended elements (online and face to face) can help learners meet goals and objectives (p. 61) Use online collaborative tools (forums, wikis, discussion boards) that mirror in-class collaborative groups (p. 68, mentioned twice) Inform students about purposes of online *and* F2F discussion (p. 69) Ensure that online and F2F modes and resources are merged and related to each other, not separate elements (p. 70)*
ISTE 2017 Standards for Educators (International Society for Technology in Education, 2017)	"Manage the use of technology and student learning strategies in digital platforms, virtual environments, hands-on makerspaces or in the field" (Facilitator, para. 6)

*Items for this section are not directly quoted because of the length and complexity of sentences in the source

Table 8

Examples of In-Person Teaching Competencies From the Literature

Source	In-person competency examples
The Learning Accelerator (The Learning Accelerator, n.d.)	"Ensures the classroom has multiple types of furniture to meet student needs" (Strategy: Creative Furnishings and Spaces, para. 2) "Allows students to choose their best work environment" (Strategy: Creative Furnishings and Spaces, para. 2) "Adjusts student schedules based on new student information" (Additional Personalized Learning Time, para. 2)
Preparing Teachers for Emerging Blended Learning Environments (Oliver & Stallings, 2014)	"Traditional direct instruction in the forms of a strong teacher presence" (p. 69)

Table 9

Examples of Generic Teaching Competencies From the Literature

Source	Generic competency examples
Virtual Schooling Standards and Best Practices for Teacher Education (Ferdig et al., 2009)	"Meet federal standards for licensing" (p. 488) "Participate in pre-service and in-service professional development" (p. 488) "Is reflective of practice" (p. 488) "Shares student progress with stakeholders" (p. 489) "Has content and pedagogy knowledge" (p. 490)
iNACOL Blended Learning Teacher Competency Framework (Powell et al., 2014)	"Embrace change and model this for others" (p.10) "Openly and frequently share successes, failures, and challenges" (p. 10) "Proactively seek to learn from and with other experts in the field" (p. 10) "Engage in problem solving through continuous planning, designing, testing, evaluation, and recalibration of teaching methods" (p. 11) "Provide resources for students to learn content and enable them to work independently and/or in cooperative groups" (p. 11)
Going Virtual! (Dawley et al., 2010)	"Promoting student reflection and self-evaluation" (p. 25) "Active listening" (p. 25) "Design of syllabi" (p. 27)

DISCUSSION

Online or Digital Context Specific Competencies

Online and digital specific competencies made up 30% of all competencies analyzed (see Table 4); these tend to focus on technology logistics such as facilitating logins and managing software, organizing online materials, and facilitating online interactions including synchronous and asynchronous discussions (see Table 6). Mention of inputting and reviewing data also occurred a number of times, especially in blended documents that focus on

mastery-based learning, which is often best facilitated with data dashboards containing information from a variety of programs.

Among the competency documents, Going Virtual! (Dawley et al., 2010) contained the most online/digital specific competencies, while the Virtual Schooling Standards (Ferdig et al., 2009), despite being labeled as a resource for online teacher competencies, had the lowest percentage of online or digital competencies among the online documents (18%).

Blended Competencies

Blended competencies, which integrate online/digital and in-person elements, are exemplified in source documents quoted in Table 7. Preparing Teachers for Blended Environments (Oliver & Stallings, 2014) was the document with the greatest emphasis on these competencies (28%; see Table 4). These are necessary skills that might require working with multiple stakeholders to effectively integrate in-person and online elements of teaching. Accounting for only 8% of the total competencies analyzed in the documents, this is a narrow subset focusing on critical abilities, such as using online collaboration to mirror in-person group work (Oliver & Stallings, 2014). Perhaps the most important aspect is insuring that online activity relates to and informs in-class instruction, a connection which confuses some groups in differentiating between technology integration and blended learning (Fisher et al., 2017).

In-Person Competencies

The in-person category accounted for only 5% of the competencies analyzed (see Table 4)—those not found in the online teaching competency documents. In-person competencies identified in a blended context involved managing the students on site, scheduling activities in the learning space, and managing technology devices (see Table 8). These competencies are not shared with online teaching, but might be present in various in-person learning environments. The highest percentage of in-person competencies (17%) were included in Learning Accelerator, possibly due to their links with specific school examples in classroom spaces.

Generic Competencies

Overall, the competencies in the documents were mostly generic: 57% of all competencies included in the analysis (see Table 4), exemplified in Table 9. While these competencies do not specify digital or online modalities, they generally emphasize collaboration, stress openness to change, and help students work independently, which are important components of blended and online learning and teaching. These practices are generally important in facilitating student learning and growth and do not require a teacher to use a computer-based system. Virtual Schooling Standards and Best Practices for Teacher Education (Ferdig et al., 2009) contained the highest percentage of generic competencies (82%; see Table 4). The ISTE 2008 Standards for Teachers and Going Virtual! (Dawley et al., 2010) tied for the lowest number of generic competencies (35%).

As we coded statements from the documents out of context, we noticed that many of the best practices, even crucial practices, for online teachers were written so they would be applicable to any environment. For example, competencies related to communicating through varied mediums, providing prompt responses to students, or practicing email etiquette are appropriate for any teacher under any circumstance, but these are crucial to the success of an online teacher because all communication is through a distance medium, with no in-person follow up as would be available in traditional or blended settings.

More Specific Blended and Online Teaching Competencies

While we had anticipated strengths and limitations to having more generic or modality-independent teaching competencies, *the generic competencies did not provide us specific enough guidance for designing professional development for blended teaching.* The primary findings of this study suggest that competencies more specific to the unique teaching needs of online and blended contexts must be developed. This would include competencies possibly specific to various blended learning models, such as the station rotation, flex, or enriched virtual models. Competencies also may vary slightly by the age group of the students. Older or otherwise more autonomous learners may be responsible for completing more online activities as they mature.

A challenge in creating and organizing competencies is to determine the level of granularity or specificity needed for the skills to be useful in

a blended or online context. The more general and abstract the competency, the more broadly it can be applied, but also the more effort is required for the user to interpret it within a specific context. Many teaching practices are generally applicable across modalities, but others require unique skills. For example, the skills needed to facilitate whole class discussion in an in-person environment are substantial, but they are different from the skills for facilitating online asynchronous discussion or the skills for weaving asynchronous discussion with in-person discussion.

The challenge with more generic competencies is that their presentation does not provide the level of detail needed to support a professional development curriculum. In our efforts to develop a blended teaching readiness instrument (Graham et al., 2017; Pulham & Graham, 2018), we found that using generic competencies could give participants the impression that they were prepared for blended teaching, when in fact they had only developed skills needed for teaching in an in-person classroom context. Those designing and organizing teacher preparation programs and in-service professional development must realize that while generic competencies may be important, specific standards and competencies that target skills unique to online and blended contexts will provide teachers and education leaders with the more specific direction they need for building curriculum required for these environments.

CONCLUSIONS

This review of teaching competencies presented in blended, online, and technology integration documents indicates that a majority of recognized teaching competencies remain generic. Generic competencies that can be applied by any teacher in any environment are more difficult to interpret and apply in the variety of tech-mediated systems that are now available. The language used to discuss online and blended teaching competencies needs to include explicit directions for using such skills: For example, the difference between communicating with students in an online format vs. an in-person format or between planning an online lesson vs. planning an in-person lesson must be specified. Without such instruction there is less chance of teacher educators teaching and modeling these skills for their pre-service teachers. The competency language should be precise and explicit if these practices are to be valuable guidelines presented in teacher education programs. We suggest that future competency descriptions include some indication of the environment in which they are to be used or contain enough

specificity to give teachers and administrators a clear indication of how the skill is different than skills a teacher has acquired through traditional teacher education or professional development.

The increasing demand for online and blended teaching in K-12 schools should increase the focus on research-based, empirically grounded practices that are needed to transform education. Rigorous studies based on real classroom observations and interviews with technology professionals at school districts that are implementing blended learning will aid in this process. Additionally, developing competencies and valid measurement processes for them could facilitate professional development focused on identifying gaps in teacher skills and personalizing instruction to teachers' needs rather than providing a non-differentiated curriculum. Developing such competencies also has important resource implications, as programs and schools have limited time and resources for professional development.

We recommend that teacher education programs endeavoring to improve outcomes for online or blended teaching examine competencies for the contexts in which they are appropriate and include more *blended* and *online* competencies in mainstream teacher education for all pre-service teachers. We also recommend future nuanced study of online and blended teaching competencies, as they eventually become mainstream rather than outside the norm for preservice teacher education.

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